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\$B 62 098

THEODORE ROOSEVELT

DYNAMIC GEOGRAPHER

BASED ON A LECTURE DELIVERED TO THE SCHOOL OF
GEOGRAPHY, OXFORD UNIVERSITY, MARCH 8, 1909

BY

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OXFORD UNIVERSITY PRESS

LONDON, EDINBURGH, NEW YORK, TORONTO
AND MELBOURNE

MCMIX

E 757
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OXFORD : HORACE HART
PRINTER TO THE UNIVERSITY

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ADAPOTLIAO

NOTE

IN writing out my lecture I have found it necessary to enlarge the stenographic notes of my secretary with much illustrative material received from the Federal Departments at Washington since the lecture was delivered. The subject requires a fuller treatment than was possible with the limits of extempore speech within the academic hour. Even in so many pages one feels that he has barely touched the subject, which demands several quarto volumes at least. I may add that the writer alone is responsible for the opinions expressed in this essay.

INTRODUCTORY

No intelligent geographer or economist will be satisfied with mere catalogues or classifications of facts, that so many trees have been planted, so many dams have been built, so many canals have been digged, or that so many cornfields have allowed so much bacon to be added to the world's common store of good. It is imperative that we connect a continental re-arrangement with the fundamental principles underlying the progress made. In other words, the economic geography of the United States cannot be intelligently studied apart from the political geography of the United States.

In reviewing the Roosevelt administration one is startled by the array of practical results actually achieved for the common good, and no less by the impetus and universality of the movement among the people toward the idea of a new democracy. There is a chance that American destiny may be fulfilled on rational instead of fortuitous lines. Mr. Roosevelt's work has been laid on geographical foundations, carried on in an ethical spirit and conservatively within constitutional limits.

The future historian will date a new era in American history from him. American politics can never again be the arid waste it was before it was watered by Mr. Roosevelt's irrigation ditches. Facing problems no less than continental, he made a political issue of a national economy. Over and above the administration of the

affairs of nearly ninety millions of people whom he essayed to give a 'square deal', were the great geographical problems to be solved for generations unborn. Here was avoidable confusion and waste. Here was possible unlimited power and use. Here was a great people bereft of certain utilities in raw materials and natural resources, some of which were going to natural waste, and some of which, with criminal recklessness, were being stripped and appropriated by the land-skinner. In the scientific divisions of the Departments of Government were thousands of experts and scientific men collecting information more or less valuable, but haphazard, concerning land and water and forest supplies, but nowhere appeared the universal mind to synthesize and utilize all for one constructive national purpose.

The first American President who was practical statesman, ethical philosopher, and scientific geographer, elected to office at the close of a period (which he closed) of arid mediocrity, when few public men were aware of an issue other than the tariff or graft,—this man has blazed new trails for American destiny. This is a great work to have achieved—to have cut a hemisphere in two and joined two oceans into one; to have begun the habilitation of what Mr. Walter Page would call an 'unkempt continent'; to have laid scientific foundations for quintupling the commercial and economic capacity of the million and a half square miles of the fertilest land on earth, lying in the basin of the Mississippi and the Great Lakes; to have snatched an area the size of New York State from the sage bush and rattlesnake, and an area four times as large from the land-skinner, and pre-

sented them to the American people without the eventual cost of a brass farthing ; to have widened the sphere of the State, changed the definition of the word ' politics ', laid democracy on ethical foundations, and made it possible to speak of politics and ethics in the same breath without an apology. This, I say, was a great work, and but a part of the actual achievement during three-quarters of the first decade of the new century, due to the intelligence and initiative and determination of one man.

Mr. Roosevelt was able to accomplish this work because he knew it was the kind of thing which would never get done of itself ; because he applied the scientific knowledge and political resources of the nation to the task ; because he had intelligence enough to know that progress is rational and not fortuitous. Here was one political geographer who happened to have had the political resources of a nation behind him, and, what is more to the point, who happened to have had the intelligence to synthesize those resources and organize them into a national programme and purpose. In these acts he expressed a faith in the people more potent than that of any exponent of individualism from Jefferson to Bryan. Here is a pledge of faith in national self-government. Here is a scientific outline for constructive and ethical democracy on the basis that the whole people can govern, and does govern, itself. He has done more than any other American to bring the public to self-consciousness, and perhaps to self-sufficiency.

No man on the Western Hemisphere ever dealt so deadly a blow to a political fetish as when Mr. Roosevelt laid his big stick on the doctrine of *laissez-faire*.

It is a very interesting fact that almost every great policy Mr. Roosevelt has ever advocated has had both an ethical and a geographical-economic character. This combination gave it also a political character. I say geographical because these policies were intimately connected with the national resources of the earth, either in their production or transportation ; and ethical because he constantly refused to consider them except with reference to the common good. It will be seen, when his account is made up, that Mr. Roosevelt is one of the few 'Applied Geographers', to use a phrase Dr. Keltie has made his own, who has taken geography seriously, scientifically, and politically, and has put the resources of a great nation behind it to further the interests of mankind.

He was the first President who dared to attempt the solution of the vital geographical problems presented by the territory occupied by the United States in their largest and completest bearings by the wisest and most conservative political methods. He saw that these problems would never solve themselves. The gospel of Individualism carried no message of salvation. And if any voice came crying from the wilderness, it was that the problems of the wilderness must be solved by a national policy grounded on the certainties of scientific foundations, with no guesswork, no haphazard, no *laissez-faire*, but a far-sighted and constructive statecraft.

There are long periods of American history in which successive presidential administrations have been fruitless, and in which the country has made no advances except such as it was impossible for such a country to

keep from making. Until now, the twentieth century, the man had not appeared capable of scientifically and intelligently investigating his data, and so able to state his problems, and then offering such wise solutions, as he has done, in so masterly a fashion, for those very problems which everybody else before him seemed to have overlooked.

It is, of course, hardly necessary to say here that I am keeping in mind other kinds and sets of problems which have been bravely met and wisely mastered in their day. But this does not keep me from saying also that the work of President Roosevelt, which has made the vast continental domain a more fruitful habitat for a happier people, now and hereafter, has already become one of the most fascinating achievements of modern times.

Theodore Roosevelt is a new kind of geographer. There are static geographers and dynamic geographers. Mr. Roosevelt is a dynamic geographer. One studies and describes that geography which man helps to make ; the other helps to make that geography which other men describe. They are necessary complements in the great scheme of geography, and they bear something like the relation to each other (if I may say it reverently) that the Bible bears to the Encyclopaedia. The dynamic geographer is the efficient geographer, the constructive geographer, the busy geographer ; the man who gets geographical things done ; the man who studies the land and water with an ethical purpose in the back of his mind, with reference to getting from them, for mankind, the highest possible amount of use. The dynamic

geographer is the strenuous geographer, and this one has made himself a practical incarnation of the principle of making two blades of grass grow where one grew before, without letting any grow under his feet.

Just now he is to try a new geographical rôle. He is becoming an explorer in Africa before he is to become your distinguished guest at this University, and, I hope, of this School of Geography. It is also said that he is going lion-hunting. So far his special animosity has been the bear. He has hitherto shown no special grudge against the lion, especially of the British variety. But if he does not make some new and striking contributions to geographical dynamics in Africa before he returns this way, those who know him will miss their guess.

SITUATION

The first decade of the twentieth century, or, roughly speaking, the administration of President Roosevelt, found the economic situation in the United States a most extraordinary and interesting one. This situation discloses some of the problems which his administration has had to face boldly, and for which it had to offer solutions. Perhaps one of the first things that strikes the observer, if he gets far enough away to take a bird's-eye view, is the chaos both in the economic and political conditions of the entire country; the anarchy which prevailed among certain people and over certain areas; the mad and unintelligent scramble to get possession of the raw materials and natural resources of the nation; the prodigious waste which attended the scramble for these

resources, and their concentration and final centralization and congestion in a few pairs of hands ; finally culminating in the stock-gamblers' panic of last year, whose evil effects have been felt by every man in the civilized world.

This panic was brought on by the stock-gambling régime in the midst of a material prosperity unknown in the history of the world, in a year when the production of American farms was greater than the entire national wealth fifty-eight years before. It occurred at the close of a generation in which the material increase of wealth measured in tons of gold coin more than all Great Britain had laid up for five hundred years ; at a time when the United States owned one-fourth of all the world's wealth and put out one-third of all the world's manufactured product.

A very interesting statement was made a few months before the advent of this panic by James J. Hill, the railway promoter. (I might as well say that there is a vast difference between the railway promoter and the railway smasher.) Mr. Hill made the statement (1906), after an era of railroad building which in twenty years had built enough railroad in the United States to reach three times round the globe and leave a branch line from here to Vladivostock, that there was neither money enough nor rails enough in the world to build track enough to carry the traffic offered.

The first decade of this century, however, found one hundred men controlling the bulk of all this wealth and nearly ninety million people controlling the rest. It has been stated that one per cent. of the population actually

owns or controls ninety per cent. of all this wealth, and the one hundred men known, for want of a better name (or worse), as Wall Street, who control the larger part of these vast assets, constitute from one eight-thousandth to one nine-thousandth part of one per cent. of the population of the United States. This is why they are able to produce a world panic, felt to the uttermost reaches of civilization, in the midst of an unparalleled and unexampled prosperity.

This first decade also, amongst this coterie of dollar-getters, found one man (and we are by no means certain that he was the richest man in the country) whose annual income is greater than the combined wealth, in total capital, of every millionaire in the United States before the Civil War.

This is the economic paradox presented by the first decade of the twentieth century.

A few people began to ask some questions as to why there was no money in circulation during this unexampled prosperity; why in the midst of it it was possible for a stock-gamblers' panic to be perpetrated; why nobody for months could borrow money on any security whatever to conduct legitimate business; and why men could not draw their own money out of the banks in larger sums than £10 at a time.

The New York financiers chose an inconvenient time for the panic. In forcing this panic the stock-gamblers made their first fatal blunder. They got the American people to wondering whether, after all, their prosperity were not a good deal like that of the fly described by Josh Billings, which had acquired a half-barrel of molasses.

A few of the more disinterested and far-sighted saw in this stock-gamblers' régime an immediate and overshadowing menace to the very existence of the American Republic. This menace is financialism. It is not commercialism, not even the materialism which constitutes, unfortunately, the basis of the American idea of life. It is an insolent and irresponsible gambling and wrecking game, beside which the Louisiana lottery was a Sunday-school; a game run by creatures whose only distinction, and apparently whose only aim, lies in the heaping-up of what others need, and they cannot use; a game destitute of soul or spirit, unless it were the spirit of Demylus at the Greek banquet, who, wishing all the fish for himself, spat in the dish.

When by a series of revelations in the business world, or more accurately speaking in the financial world, it became evident, through these revelations appearing in instalments with appalling punctuality, that these vast and gruesome hoards had been heaped up by methods which would not compare favourably with those of the late Captain Kidd (inasmuch as he was willing to take some chances and invested himself with certain shreds of romance), the American people began to sit up and rub their eyes. It began to be apparent to them that American institutions were being developed rapidly and almost solely for the benefit of the financial classes. Those without the financial instinct, however able in other walks or realms of life, suddenly found themselves in danger of slavery or extinction. One eight-thousandth of one per cent. now ruled this blessed democracy. Life on the financial or acquisitive plane, under individualism,

means that the strong win and the weak perish. This, being interpreted, means that the financial strong win and the financial weak perish, and the inevitable issue is a financial despotism. Free competition had broken its backbone carrying its own fat, and had crawled into the sarcophagus of billionaireism to die and rot. That which De Toqueville had feared had come to pass in America ; Democracy had issued in despotism. The dream of the Jeffersonians and the eighteenth-century revolutionists had not been fulfilled. The *laissez-faire* millennium had not arrived. We found we had been developing the wrong kind of democracy—the democracy of individualism. For individualism means unlimited and uncontrolled competition and the apotheosis of the selfish instinct. It makes no allowances for the principle of handicap. Uncontrolled competition means the fattening of the big upon the little. It is the law of the fish-pond, the dog-kennel, and the wolf's den. Free competition in its larger sense issues in the supremacy of the strong and cunning. The supremacy of the strong issues in the aggrandizement of the strong at the expense of the weak, until there is no more competition or possibility of competition. If a dozen wolves are put in a fold with a hundred sheep, on the principle of free competition, there is only one question involved, and that is *how long* before the wolves are to acquire all the mutton.

Mr. Roosevelt decided that the time had come to put a stop to the stock-gamblers' régime. He knew that if he did not do it the American people would do it in another way. If it were to be done conservatively it

must be done at once. It was for this reason that he stepped out into the arena to do battle, with the spirit of the old gladiators upon him. Indeed, he is not at his worst in this rôle, this man of peace! He demanded a 'square deal' for the people. He demanded the organization, conservation, and use of the national resources. He demanded constitutional solidarity in place of the whimsical rule of state rights and *laissez-faire*. He demanded a sovereign for the areas of anarchy between the States, a scourge for the cave-dwellers of lawless wealth and impecunious envy alike, prison bars for the unlawful exploiters of unrequited toil and unprotected property, Nemesis for the insolent throttlers of competition, gyves for the pirates on the high seas of finance.

Mr. Roosevelt holds that political responsibilities are immanent; that political relations, as they are objectively expressed in a rational state, are the fulfilment of certain capacities in man, without which he would not be man at all, and that such capacities are ethical. To him politics reveal a body of duties as well as rights, which themselves imply a common life and a common good.

Every measure he has ever proposed, and lost or won, has had its distinctive ethical value. Every law he has enforced and every act he has carried through Congress, every measure which through his initiative and support has been written on the statute-books of State and nation, without a single exception, has been in restriction of the field of anarchy, in the interest of law and order and equity, and toward the enlargement of the ethical sphere of the State—toward the centralization and rationalization and moralization of its power.

ETHICAL SPIRIT

Mr. Roosevelt's contribution is not only that he has given the nation a new rational and scientific idea, but he has awakened a new ethical spirit. The Hon. William Rodenburg said in Congress last April, 'If Theodore Roosevelt had accomplished nothing more than the awakening of the public conscience to a realization of the dangers of corporate encroachment he would still lead all the men of his day and generation in the great work of practical and permanent reform.' The American people are no worse than others, and I will not say that they are very much superior, but for some reason or other, until recently the word 'politics' in America always carried with it a reproach. For three-quarters of a century, since the Jacksonian Democracy crystallized into practice, the slogan was 'To the victor belong the spoils'. The very mention of American politics had been but a signal, from sheer force of habit, for one hand to fly to one's pocket and the other to one's olfactories in instinctive self-defence. In the proper sense, we may hardly be said to have had a Politics at all. We had a kind of political scrap-book ; we had policies ; we had a political economy (imported and antiquated) ; but we have had no political philosophy. Consequently we have had no political ethics. We have developed in many respects political morals, but for a long time we hid these under a bushel, and could have gotten them under a peck. But no one has yet formulated the theory of our institutions, nor had they, before the beginning of this century, worked out a theory or practice of political

ethics. But a revolution has been accomplished by the incomparable work of the United States Civil Service Commission, of which Theodore Roosevelt was one of the earliest and most effective commissioners.

This is what Mr. Roosevelt has laid foundations for doing. His ethical contributions are much more far-reaching and important than his restrictions on unlawful financial power. He has worked out a new constructive ethical idea on scientific foundations. He has realized that idea, not only in stemming the tide of individualism rampant, but he has shown the path which will avoid the evils of socialism. He has been the first man in position of peculiar power or influence since Hamilton to see clearly and draw distinctly the natural line of cleavage which separates the two great principles in natural antagonism in America. He has precipitated the political issue of the twentieth century, not merely in the United States, *but the world issue of the twentieth century*, that between the democracy of individualism, which threatens the very existence of democracy upon the earth, and the democracy of nationalism which offers the only rational and ethical alternative for socialism or individualism.

‘The chief aim of De Toqueville’, says Professor Flint, ‘was to demonstrate that democracy was in imminent peril of issuing in despotism.’ Further on he says, ‘There is nowhere visible on earth to-day any power capable of resisting or crushing democracy. If there be none such, it does not follow that it will not be arrested in its progress, but it follows that it will only be arrested by itself.’

The distinguishing characteristic of Mr. Roosevelt’s statesmanship is that, if he has marked the outlines for

the future of the only kind of democracy in which politics and ethics can ever coincide, he has saved democracy from itself.

Therefore, I say distinctly, knowing that the judgement of history will back me up and that the magazines and publishing houses owned in Wall Street will not, that Theodore Roosevelt is one of the few universal political geniuses of the world, and that a new era in world politics and a new day for rational, ethical, and constructive democracy dawned upon the world the day Theodore Roosevelt was sworn in as President of the United States.

CAREER

His career is worth studying in all of its phases ; as cowboy in the Bad Lands, Assembly-man in New York, Police Commissioner in New York City, U.S. Civil Service Commissioner, Assistant Secretary of the Navy in Washington, Rough-rider in Cuba, Governor of New York State, Vice-President and President of the United States. It is not generally known that Mr. Roosevelt gave the turning screw to the Spanish War, and that before it began ; and that it is quite likely the geography of America and the world would have been different had he not been Assistant Secretary of the Navy at the beginning of this war. Here he stood at the breach in a national crisis and wrought a work whose vast importance is little understood even in the United States.

It is impossible for a Briton to conceive of the carelessness of the American national defences just before the Spanish War, or even now for that matter. But then it is equally impossible to conceive of the fatuous egotism

of those amateurs in Congress who seem doomed to ignore their own most recent history and to perpetuate their stupid optimism, forgetful that whether they wake or sleep there are new Pacific possessions and a brand new Panama Canal to protect. But from the beginning Mr. Roosevelt has been the *bête noire* of the ostrich statesmen from 'Podunk'—Minnesota—perhaps, who are quite sure no foreign navy will ever ascend the falls of Minnehaha.

Mr. Roosevelt was Assistant Secretary of the Navy prior to and at the breaking out of the Spanish War. He, almost alone in the official family, foresaw that war. He was laughed at for his foreboding prophecies. But without the foresight of this Assistant Secretary, the whole war would have resulted differently. It was he who had Dewey sent back to the Philippines after he had been recalled. It was he who filled the empty provision larders and empty ammunition boxes and empty coal bins of the Pacific Fleet. It was he who dealt that cruel blow to Yankee penury when he spent a million hard-earned dollars on naval target practice and brought the efficiency of the American gunner from that of about the lowest to a place as high as that of any in the world.

As a youth he had spent some years in the West, where one of the factors of life is a gun. There he learned the philosophy of preparedness, precision, and despatch. Therefore, he was able to create 'The man behind the gun.' Mr. Roosevelt was the man behind the man behind the gun. And the Spanish War was fought, and more of the credit of its outcome is due to Mr. Roosevelt than to any other one man. For, without the preparatory work

he did, the war could not have been conducted as it was. Had Mr. Roosevelt been as fat-sighted as the average American, even to-day, who has decided that all wars have been fought and that we are too amiable to be attacked, it is not hard to imagine that Emperor William might have lent a hand in the Pacific, and that the Philippines and Hawaii might have fallen to him. And when would have been a better time to raise the German Eagles in Brazil and smash the Monroe doctrine once for all? It certainly came near enough to this as it was. We have not forgotten the Dietrich incident, nor the part the Britons played in it.

Here was his first great contribution to the geography of the world.

The administration of Mr. Roosevelt is as noteworthy for what he has tried to do as for what he has done. One can say of those policies and measures in which he has been thwarted by members of his own party, that they are not lost. They have lodged in the moral consciousness of the American people, and must be reckoned with hereafter.

The instance of a few of the actual achievements of Mr. Roosevelt will serve best of all things to illustrate the idea which has been the inspiration of his every public act in a varied career. It would take a good volume to present an adequate outline of the work this versatile man has accomplished, to say nothing of the brilliant policies he has conceived and worked for and so far lost.

Early in his presidential career a great coal strike produced a coal famine, and the situation was so serious that the country was threatened with civil war. Mr. Roose-

vult invited representatives of the miners and mineowners to meet him, not as President, but as an individual who happened to be President. The dispute was settled fairly and quickly. Senator Spooner said that another month would have seen mobs in every city tearing down buildings for fuel, because their families were freezing, and a million socialists would have been made in a week which would have 'set us back a hundred years'.

When Mr. Roosevelt came to his own there was nothing in the legislation of the United States to keep the American people from being poisoned at so much profit per head, by the assiduous disciples of individualism and *laissez-faire*. June 30, 1906, saw two bills become laws (which were not passed without most violent opposition from men of his own party who held briefs for the 'interests' in Congress), laws which will produce untold good for the people of the land. I mean the meat inspection and pure food laws. These Acts have been followed by similar legislation by the legislatures of many of the States.

No administration has ever done so much to put America on friendly as well as self-respecting relations with the countries of the world as has the one which has just closed. The Philippine Islands enjoy a liberty and prosperity never dreamed of in their history. Peace has been restored in Santo Domingo, and the troops have been withdrawn from Cuba. The sentiment of the South American Republics towards the United States has been revolutionized. The calling of the second Hague Tribunal was due to Mr. Roosevelt, and many achievements in the way of international arbitration stand to the credit of his administration, and treaties

have been made whose catalogue would fill a column. Over £2,000,000 of the Chinese indemnity have been forgiven. The neutrality and integrity of China during the last war were largely due to him, as well as the assembling on American soil of the Statesmen of Japan and Russia which put an end to that war. The relations between the United States and Canada have been vastly and permanently improved in the settlement of the Alaska boundary and other disputes of long standing. The whole diplomatic and consular service of the United States has been overhauled, reorganized, and its efficiency multiplied to ten times what it was ten years ago ; so that this service has made greater actual progress than has marked its entire previous history. Indeed, there is scarcely a Bureau, or a Division of a Department, which has not been reorganized—some of them revolutionized—new ones created and everything made, some many, some a hundred-fold, more efficient under the organizing genius of this man in less than ten years.

The whole War Department has been reorganized, together with the army itself. Its work has more than kept pace with the niggardly assistance of Congress and a people who have 'never been licked',—a feeling which has retarded development on adequate lines for Army and Navy and National Defences alike. Nevertheless, the War Department has gained control over certain diseases in the tropical countries, and in Cuba, where Yellow Fever has made its appearance every year for a century and a half before, not one case has appeared since Mr. Roosevelt's first year in office. A bureau for Insular affairs has been established and the

work of the Bureau of American Republics has been enlarged to the dignity almost of a Department of the Government, supported by the U.S. Government together with the South American Republics, while the vast work of improvement of rivers and harbours has been placed on a new footing under the Engineer Corps of the Army.

A very interesting sidelight is thrown on this subject by the part taken by the War Department under Secretary Taft, which might just as well be called the Department of Constructive Statecraft as the Department of War.

In addition to the Pacification of Cuba, the Administration of the Philippines, the building of the Panama Canal, and many other useful works not usually done by War Departments, into the hands of the Engineer Corps of the Army was placed the work of River and Harbour Improvements, whose work has resulted in a great benefit to the agricultural, commercial, and manufacturing interests of the country. There are now about six hundred separate projects, ranging from creeks and inlets to seaports, where the Engineer Corps is improving the rivers and harbours. For example, in the Great Lakes, where the shipping carries one-quarter as much freight as the whole railway freight equipment of the nation, at one-ninth of the cost per ton, the value of such a service is seen. To illustrate the enormous quantity of business—through the St. Mary's Falls Canal, connecting only the Lake Superior route with Lakes Huron and Erie, and not counting at all the vast commerce between the ports of Lake Michigan, such as

Chicago, Milwaukee, &c., there passed, during the year 1907, 15,643 vessels, aggregating over thirty-two million registered tons, carrying over forty-two and a half million tons of freight. Through the Suez Canal for the same period there were 4,273 vessels, of which sixty-four were men-of-war, transports, &c.; gross and net tonnage respectively of merchant vessels, 20,307,800 and 14,596,478; gross and net tonnage respectively of men-of-war, transports, &c., 245,361 and 131,848; total gross and net tonnage respectively, 20,533,241 and 14,728,326. This service includes the improvement of the Mississippi and its tributaries, aggregating 16,000 miles of navigable waterways. In short, the improvement of harbours and waterways of the Pacific and Atlantic Coasts, every navigable river in the country, and 23,000 miles of sea coast, directly benefiting every inhabitant in the United States.

The close of the Spanish War found Cuba, Porto Rico, and the Philippines in the hands of the War Department. The necessities of the situation called for the organization of a bureau to manage the affairs of these three insular peoples, and the division which the Secretary of War organized, Congress has since enlarged into a Bureau. There has been nothing more fitting than that Mr. Taft, who may be said to be the creator of the modern Philippines, should, as Secretary of War, have had direct charge of the Bureau of Insular Affairs.

I was forcibly reminded of the evolutionary methods of the American War Department in the subjugating of a people, in Honolulu in 1901. It was an event in those days before the cable to see the black smoke on the

horizon which lay between us and home and guess who was coming and what for. One day (it happened more than once) the army transport bound for the Philippines tied up at the docks. There were something like five hundred school teachers aboard, most of them in sweet white muslin. When they came ashore Honolulu capitulated in thirty minutes. When they sailed away the inhabitants, native and white, gathered in hundreds to wreath them in *leis*, and to throw ropes of flowers at them as this formidable warship moved away. This is the way the Philippines have been subjugated, and the method constitutes one of the new uses for Departments of War, recommended for trial to Europe and Emperor William.

THE BIG STICK

The President's great campaign against political corruption, and the whole system of graft, of which the people had no adequate idea before he came to office, is a campaign which deserves full and separate treatment. It is impossible to go into those details here, but a few main points are of more than usual ethical interest.

It became evident to the President that it was only a question of a short time when the people must settle once for all the question as to whether the people or the corporations should rule the nation. Mr. Roosevelt started the agitation for the preparation of public opinion, set to work departments and bureaus and divisions of the Government, and created new departments and bureaus to do the work of providing the national govern-

ment with the means of control of the railroads and the large industrial corporations.

He also set to work the vast national scientific machinery to build up what rampant individualism had torn down. It is not to the credit of the American people, nor of Mr. Roosevelt's predecessors in office, that long ago they had not done many of the things he has done. The President frankly avowed his policies as the middle ground between individualism and socialism, and he told the corporations flatly that if they would not accept in good faith Government regulation, they would have to accept Government ownership. He said this because he knew, as perhaps no other man in the United States, the exact state of public opinion.

The Department of Commerce and Labour was created within two years after Mr. Roosevelt became president. Its work was inaugurated 'to do for labour everything that the law permits the department to do, and to give the manufacturers all the knowledge the department can secure'.

The Department has done many an important work, such as preventing fraudulent citizenship and disseminating information regarding opportunities for immigrants in different parts of the country. Its daily trade and consular reports are a vital factor in American manufacture. A National Council of Commerce has been organized to synthesize the work of all the commercial organizations of the country. The Bureaus of Labour, Navigation, Standards, Fisheries and Statistics have been enlarged and improved. Perhaps the most conspicuous sub-division of this Department is the Bureau

of Corporations, a creation of Mr. Roosevelt. It is the primary purpose of this Bureau to deal with national issues on the lines of a national policy, local state action having proved so inadequate as to be absurd. The President said to Congress: 'A combination should not be tolerated if it abuses the power acquired by combination to the public detriment. Our aim is to help every honest man, every honest corporation, and our policy means in its ultimate analysis, a healthy and prosperous expansion of the business activities of honest business men and honest corporations. Among the points to be aimed at should be the prohibition of unhealthy competition such as rendering service at an actual loss for the purpose of crushing out competition.'

The proposition is that in so far as corporations (chartered under State Laws) are engaged in interstate commerce, they are subject to Federal Law. This covers nearly all of the largest corporations in the United States. This Bureau investigates the organization, conduct, and management of corporations engaged in interstate commerce. Its Commissioner has compulsory powers of obtaining information, which he sets before the President, Congress, the Department of Justice, and the public. This information is acted upon by the Department of Justice. During six years of President Roosevelt's term, fifty per cent. more prosecutions were brought in the courts than the total number brought up before the Interstate Commerce Law came in force, a period of fourteen years. Before this there were none. Mr. Roosevelt was the first president to take the Anti-trust law seriously, and to recommend through his own

initiative and carry through Congress, and enforce through the Judiciary further and more effective legislation which shall safeguard the rights of the common people. Old laws were dragged out and refurbished and new ones were made, and all of them were put to work. The period of financial anarchy was destined to close. Many of these vast concerns were indicted, convicted and fined by the Government for unlawful acts. The Interstate Commerce Commission, the Bureau of Corporations, and the Department of Justice were kept busy. One of the best results of all has been the effect of publicity. Mr. Roosevelt in his message to Congress, December 3, 1907, said: 'There has been complaint of some of the investigations recently carried on, but those who complain should put the blame where it belongs—upon the misdeeds which are done in the darkness, and not upon the investigations which brought them to light. The Administration is responsible for turning on the light, but it is not responsible for what the light showed. I ask for full power to be given to the Federal Government because no single State can by legislation effectually cope with these powerful corporations.'

The Central Government alone is 'competent to exercise full jurisdiction and control.'

'Our purpose in strengthening it' (the anti-trust law), he said to Congress on April 28, 1908, 'is to secure more effective control by the National Government over the business use of the vast masses of individual and especially of corporate wealth, which at the present time monopolizes most of the interstate business of the country. . . .

In the highest sense of the word, this movement for thorough control of the business use of this great wealth is conservative. We are trying to steer a safe middle course, which alone can save us from a plutocratic class government on the one hand, or a socialist class government on the other, either of which would be fraught with disaster to our free institutions, state and national. We are trying to avoid alike, the evils which would flow from Government ownership of the public utilities by which interstate commerce is chiefly carried on, and the evils which would flow from the riot and chaos of unrestricted individualism.

‘There is grave danger in our free institutions in the corrupting influence exercised by great wealth suddenly concentrated in the hands of a few. We should in some manner try to remedy this danger in spite of the sullen opposition of those very few powerful men, and with the full purpose to protect them in all their rights at the very time we require them to deal rightfully with others.’

These are the words of a far-sighted, fair-minded conservative statesman, calling 85,000,000 people back to first principles and defending their just claims against those sinister elements which were able in a time of plenty and unequalled prosperity to force the stock-gamblers’ panic of last year.

Closely allied with the work of this Bureau is that of the Interstate Commerce Commission (strictly non-partisan) whose efficiency has been multiplied many times by the work of Mr. Roosevelt. It exists now to guarantee the fundamental political rights of individuals

to use the common carriers of the national highways on equal terms, rights which it is the duty of the sovereign to enforce, where the expense and burdens of negotiation and litigation are assumed by the Federal Government. The old interstate commerce law was found inadequate to meet the demands of justice, and in one of the most famous battles in the history of Congress, the Hepburn Act or Rate Bill was made a law in June, 1906, a law which would have been impossible without Mr. Roosevelt at the White House. This law marks one of his greatest victories. The law is fundamental in the elements of equity it contains, looking rather to prevention than prosecution of wrong, on the theory that damages will not compensate a man who has been ruined by unfair discriminations. It aims primarily at rebating, restoring the imprisonment penalty. Nothing has been so destructive of free competition as rebating in its various forms and subterfuges, such as 'midnight tariffs' (now a change of tariff requires thirty days' notice), discriminations in the collateral service of carriers, such as icing, refrigeration, elevation, terminal, storage, reconsignment and switching charges by railroads engaged in traffic as purchaser and shipper and seller of staple commodities such as coal, lumber, grain, iron, &c., always to the detriment, of course, of the competitor of the railroad. The status of not only railroads, but Express Companies, sleeping-car companies, and pipe lines has been established as that of common carriers, and abuses by them can no longer exist after they have been discovered. They are restricted to their proper sphere—transportation—and prohibited from acting as

buyer and seller of commodities carried. The law as enforced by the Commission also aims at clearness and simplicity in stating transportation charges. In twelve months ending November 30, 1907, there were filed with the Commission 220,982 tariff publications, all containing changes in rules and rates and about 400,000 notices of concurrence in tariffs. This will give an idea of the magnitude of the work.

The old saying which passed muster so long, that the law is a web which catches the little flies but which the big flies break through, has begun to have a certain remoteness, for the principle has been not only asserted but enforced, that big and rich corporations are not better than the law. The billionaire anarchist has felt the big stick.

CONSERVATION

The last days of his administration presented the last public policy and one of the largest ideas which President Roosevelt has ever offered to the world. The Canadian and Mexican Commissioners of the North American Conservation Congress, in session at the State Department with the American representatives and the President, gave their approval to the President's plan and requested him to take the initiative in calling an International Congress of Conservation to be held at the Hague. The fact that such a World's Congress should be called to meet at The Hague, instead of Washington or London or some other great capital, shows at once some of the ideas in the President's mind, beyond the mere principle of utilizing the resources of the earth, or for making and

comparing inventories of the natural wealth of the world. The man who is responsible for calling the second Peace Tribunal at The Hague, and who was awarded the £8,000 Nobel Peace Prize, and who immediately devoted the money to the further interests of peace in the establishment of better relations, and the peaceful settlement of disputes between labour and capital, no doubt saw very clearly when he chose The Hague for a meeting-place all the possibilities which were involved in such a Conservation Congress, especially when surrounded by the peaceful traditions of The Hague. It is proposed to make this Conference conserve the interests of peace between nations, as well as to conserve the natural resources of those nations. This World's Congress would, therefore, be a Conservation Congress in more senses than one. It would conserve and develop all the unwonted possibilities involved in nations getting together, and through their representatives conferring with each other as to what they have in common ; as to what one nation has and the other nation has not ; as to making it possible for the people of the one continent, one zone, or one race to benefit by the surpluses of another continent, or another zone, or another race. It would hasten the removal of the unnecessary barriers which might prevent an easy exchange, at the same time protecting the interests of these nations, by getting their representatives around a common council board, and making of them a new type of Knights of the Round Table. Under a new cosmopolitan chivalry, perhaps, they might look for the things they have in common instead of those they have at difference ; look toward co-operating with each other

in the vast interests of the world's great common good, instead of antagonizing each other upon the plane of individualism and selfish instinct. It offers a field of work so brilliant and fascinating in the conception on a universal scale, and the realization and launching of President Roosevelt's overruling and constructive conservation idea, that one cannot but feel that here, after all, is the central idea and aim of this world's statesman, a fitting climax for his presidential administration and a fit beginning for such new developments of his career as the world may still have in store for him.

The Canadian and Mexican delegates of the North American Conservation Congress, while they were enthusiastic in their expressions of approval of the proposed conference at The Hague, made it known clearly that in no sense was this International Congress to take the place of the North American Commission. It was their purpose to work together and to see what the three countries occupying the North American Continent could do for themselves.

The Declaration of Principles adopted by the representatives of the three Governments of the North American Continent is a startling document, of good omen.

It recognizes, first, the mutual interests of these nations and declares concerted action the best method of safeguarding them. 'Natural resources are not confined by the boundary lines that separate Nations.' Agreeing that no nation acting alone can adequately conserve these interests (how much less can individuals), concurrent measures are recommended conserving the material foundations of the nations concerned.

National resources are all materials available for the use of man, such as soil and waters and forests and minerals.

‘We agree that these resources should be developed, used and conserved for the future in the interests of mankind, whose rights and duties to guard and control the natural sources of life and welfare are inherent, perpetual, and indefeasible. We agree that those resources which are necessities of life should be regarded as public utilities . . . and that effective measures should be adopted to guard against monopoly.’

‘The maintenance and improvement of the public health is a first essential.’ Facts which cannot be questioned demonstrate that immediate action is necessary to prevent further pollution, mainly by sewage, of the lakes, rivers, and streams throughout North America. Such pollution, aside from enormous loss in fertilizing elements entailed thereby, is an immediate and continuous danger to the public health, to the health of animals, and, when caused by certain elements, to agriculture.

{The forest reserves which are indispensable to civilization and public welfare must be permanently maintained under Government control, and sufficiently increased to protect the sources of streams, moderate floods, equalize the flow of water, temper the climate, and protect the soil. They should therefore be controlled or acquired by the public, and all lumbering operations should be carried on under a system of rigid regulation on the ground that the forests are public utilities. }

The waters are a primary resource. The domestic and municipal supply, as well as that for irrigation, naviga-

tion, and power, are interrelated public uses. All waterways 'should be retained under exclusive public ownership and control', and 'provision should be made for the expropriation of any privately owned land and water rights required'. 'Public authority should control the headwaters and provide for the construction of storage reservoirs, and for the equitable distribution and use of the stored water.'

'We recognize land as a fundamental resource.' Recommendations are made in favour of the home maker and for the Government control of certain lands in order to 'restore their value, promote settlement, and increase the public resources.'

The mineral resources forming the chief basis of industrial progress 'should hereafter be disposed of by lease under such restrictions or regulations as will prevent waste and monopolistic holdings and supply the public at reasonable prices.'

Each country shall profit by the experiments and discoveries of the other, and all the nations of the world should be invited to conference on 'world resources and their inventory, conservation, and wise utilization.'

This remarkable programme was adopted by the representatives of the three nations of the North American Continent.

It is reported in the dispatches that the Dominion Government intends to adopt, practically in their entirety, the recommendations arrived at by this International Conference at Washington with regard to the proper and adequate conservation of the natural resources of Canada and the United States. New Standing Committees have

been appointed by the House of Commons, with instructions to take under their especial charge all questions relating to Fisheries, Forests, Mines, and Waterways, and are now preparing to take up all the important questions broached at the Washington Congress with a view to the adoption of a united general policy to prevent any further waste or extravagance in dealing with the rich natural heritage of the people.

The famous White House Conference of Governors was called by the President last May, not only to formulate into a better organized system the conservation policies, but to state their principles and to secure the co-operation of the Governors of the different states and territories in enlarging the field of work. After discussing principles for three days, which discussion included papers by both scientific and economic experts, they drew up and adopted a 'Declaration of Principles', the main objects of which are stated in the following quotations :

'We agree that further action is advisable to ascertain the present condition of our natural resources and to promote the conservation of the same. And to that end we recommend the appointment by each State of a Commission on the Conservation of Natural Resources to co-operate with each other and with any similar commission on behalf of the Federal Government.'

'We urge the continuation and extension of forest policies adapted to secure the husbanding and renewing of our diminishing timber supply, the prevention of soil erosion, the protection of headwaters, and the maintenance of their purity and navigability. We recognize that the private ownership of forest lands entails responsi-

bilities in the interests of all the people, and we favour the enactment of laws looking to the protection and replacement of privately owned forests.'

'We recognize in our waters a most valuable asset of the people of the United States, and we recommend the enactment of laws looking to the conservation of water resources for irrigation, water supply, power, and navigation, to the end that navigable and source streams may be brought under complete control and fully utilized for every purpose.'

'We especially urge on the Federal Congress the immediate adoption of a wise, active, and thorough waterway policy, providing for the prompt improvement of our streams and conservation of their watersheds required for the use of commerce and the protection of our people.'

'We recommend the enactment of laws looking to the prevention of waste in the mining and extraction of coal, oil, and gas, and of minerals, with a view to their wise conservation for the use of the people, and to the protection of human life in the mines.'

'We agree that the lands should be so used that erosion and soil wash shall cease, that there should be reclamation of arid and semi-arid regions by means of irrigation, and of swamp and overflowed regions by means of drainage; that the waters should be so conserved and used as to promote navigation to enable the arid regions to be reclaimed by irrigation and to develop power in the interests of the people; that the forests which regulate our rivers, support our industries, and promote the fertility and productiveness of the soil, should be pre-

served and perpetuated ; that the minerals found so abundantly beneath the surface should be so used as to prolong their utility ; that the beauty, healthfulness, and habitability of our country should be preserved and increased ; *that the sources of national wealth exist for the benefit of all the people, and that monopoly thereof should not be tolerated.*'

' Let us conserve the foundations of prosperity.'

One of the striking results of the White House Conference of Governors is that, since its meeting last May, thirty-six different States have appointed Conservation Committees. In a private way, fifty of the organizations representing the great industries of the country have also appointed their own committees to foster scientific work in the way of investigation and application of improved economic principles to their interests, and these movements, which have been crystallized within ten months, are only an indication of an enormous popular educational and propagandist movement which is being carried on throughout the entire country.

THE SCOPE

The American hemisphere covers an area of about 14,950,000 square miles, of which about 8,000,000 square miles belong to North America. That Eurasia was probably never known to the aborigines of North America in any real sense, does not seem so strange as that civilizations could have arisen and flourished and fallen and decayed before the discovery by the European races of this fecund hemisphere, capable of such vast economic power and utility.

A glance at the world map will show the larger portion of this hemisphere in its equatorial and sub-tropical regions encroached on by the sea, and the greater portion of its areas not only lying in the temperate zone, but mostly free from such vast deserts as in Asia and Africa destroy economic utility and furnish insuperable obstacles to communication. Again, both the northern and southern continents have been furnished with means of sea communication in their rivers, incomparably superior to those of either Europe, Asia, or Africa. The Mississippi-Missouri River, for example, furnishes one continuous navigable waterway for forty-three hundred miles, with a system of navigable waterways of about sixteen thousand miles, capable, under proper treatment, of carrying ocean-going steamships.

The St. Lawrence River and the Great Lakes offer a continuous waterway, with short canals, of twenty-two hundred miles, and have a drainage basin of six hundred thousand square miles. One can float in a canoe without meeting a rapid or cataract on the Amazon, two thousand miles from the foot of the Andes to the Atlantic Ocean, and then hoist the sail and sail back again, for practically all the winds blow up stream.

The Mississippi has more navigable water than all the streams which drain Europe, and the Amazon discharges more water than the eight rivers of Asia—the Yenisei, Indus, Ganges, Ob, Lena, Hwang-ho, and the Yang-tse of China.

Productive power depends upon heat and moisture, and these are present, roughly speaking, in the whole western hemisphere, except in a narrow margin of British North America of arid or mountainous waste and frozen land.

The Mississippi basin, of 1,280,000 square miles, may be made the site of a material civilization, so rich as the world has never dreamed of before—a basin economically the most important in the world, and capable easily of supporting one-half the present population of the globe. For the Mississippi basin is economically probably twice or three times as productive (if not more than that) as all the rest of the United States. An interesting sidelight on this subject might be found in referring to the first volume of the *Encyclopaedia Britannica* of the edition of 1875. It states that while the American world is half the size of the old, it contains equally as much useful soil, and more productive power than Europe, Asia, and Africa combined, and is capable of sustaining a population of six hundred millions more than twice the present population of the globe. This was written, however, before the resources of West and North-West Canada, and certain parts of Africa, were ever even considered.

There are about three million square miles of land surface in the United States proper, a little over one-fifth of which is under cultivation, about a quarter being covered with forests or stumps, and some smaller proportion covered with woods, undergrowth, and other bushland. With the exception of a small amount of mineral lands and, of course, waste lands, the rest is grazing land. While there are sections, principally in the south, where the farmers have been paying no attention to the matters of fertilization or rotation of crops, it has actually been demonstrated that the soil of the United States, as a whole, is gaining in fertility. The outside limit of lands capable of cultivation in the United States is twice the

present area under cultivation. There is nothing to limit the population of the United States to twice, or even ten times, its present number, and as the farm crops are increasing much more slowly than population, and as there is an immediate limitation to the acreage available, and practically no limit to the possible population, and inasmuch as all the best lands are taken, and those now available are more or less uncertain in their value, the increase in the yield per acre becomes a problem which the nation must solve, and that at once. Over and above the lands possible for home-making, there are other areas containing mineral, water, and timber supply, which the nation must hold in its own possession and maintain in efficient condition owing to the intimate relations they sustain to the other lands of the United States. But all these lands, old and new, made and unmade, are capable, under the new science of agriculture, and under the new idea of national conservation, of being increased in their productive capacity manyfold.

When Mr. Roosevelt looked out over the broad domain of the United States, he also looked ahead to the needs of the future population of the United States. If the founders of the country built for the future, and for those generations then unborn, one of which is ourselves, and thereby earned our everlasting gratitude, why should not present-day statesmanship lay scientific foundations for making a greater people in the future with a happier lot in life? Several things were obvious to his intensely practical mind. That they had not occurred to any former president or any former congress, or, we may say, to any former American statesman, was no deterrent to

his audacious dream. He saw the vast possibilities in the land and its running water. He doubtless said to himself, 'Why not take the trouble to get ready for their highest use the incomparable waterways of the North American Continent, into the very heart of which it is possible to extend the coast-line and ocean shipping? How much better that certain billions of tons of fresh water, instead of destroying farms, should make farms; instead of carrying away soil should deposit soil; instead of blocking navigation should extend navigation; instead of destroying life should support life!'

This was his secret.

THE WATERWAY IDEA

The Roosevelt Waterways idea involves a project no less imposing than the fundamental rearrangement of the New World.

The cutting of the Isthmian Canal is a geographical event of the first magnitude and of first importance; while the more useful, if less attractive, scheme for the artificialization, the control and use of the Mississippi River and its tributaries, and the co-ordination of all the problems related thereto, presents a scheme in scientific government as brilliant as anything of the kind ever before presented to the human mind.

The conception involves a project for the artificialization, the control and use under one great engineering scheme, of not only the whole Mississippi River system, with its sixteen thousand miles of navigable deep waterways and countless unnavigable tributaries; but, connected with the problems of this continental artery called

the Mississippi River is that of its own canalization and the canalization of one of its own tributaries, namely, the Illinois River, and the deepening of the Chicago Drainage Canal through to Lake Michigan.

There are a few geological points of some interest in connexion with the past and future of this scheme. Probably before the waters of the Upper Mississippi River found their way into Hudson's Bay, the waters of the Great Lakes, when the great glacier lay across their present outlet, ran across to the headwaters of the Illinois, across the country where Chicago now stands, and down the Mississippi to the Gulf of Mexico. Through this very old channel of ancient overflow lies the Chicago Drainage Canal, and here will be built the deeper and larger waterway which will connect the lakes and gulf. It is interesting to note also the fact that the land supporting the eastern outlet is rising nearly six inches per hundred miles per hundred years, thus throwing the waters back gradually to the lower part of Lake Michigan ; and it is more than likely that in two or three thousand years the geologic process of the ages will come appropriately to the support of the Roosevelt plan.

It is idle to say that the Isthmian Canal would have been done sooner or later. The Western Hemisphere had been discovered and had been developed for four hundred years, and we seemed no nearer to it than when Gomara, in 1551, urged Philip II to cut it through. Since that time much effort and much treasure, and many lives and many words have been wasted, and the world was tired of waiting. The work waited for the man who would wait no longer. Mr. Roosevelt seized the opportunity

which passed his way, and posterity would have forgiven him had he made the opportunity, and he set to work. He made terms at once righteous and fair with France for what had been done. He organized a preparatory sanitary work of unparalleled efficiency, which made out of a plague-hole a healthy place. He transplanted schools, churches, Christian associations for men and women, appointed a Commission with assistants who have been models of civic virtue and administrative efficiency, and got the work going which will have ships moving through from the Atlantic to the Pacific in a few hours, now, in less than six years from to-day. The Panama Canal will save 10,000 miles for every ship plying between New York and San Francisco. As an example of its economic value, it will save £2,000 for every 2,000-ton barque plying between these two points. It will add eight shillings per thousand feet to the values of the vast forests of the Pacific Coast from California, Oregon, and Washington, to British Columbia and Alaska, adding, perhaps, a hundred million pounds to the present value of those timber areas alone—twice the cost of the canal. Not only will the commerce between Occident and Orient pass through it ; the Andean countries will be opened, with the Mississippi and the Hudson ; and the Orinoco and Amazon will make a new Mediterranean of the Caribbean Sea.

In a message to Congress, December 3, 1907, the President recommended the development of the Deep Waterway and of the great river system as national water highways, and urged that this development should be considered as a *Government undertaking*. He called for a deep waterway from the Great Lakes to the Gulf of

Mexico, and for deep water highways leading from it to the east and west. 'Such a waterway,' he said, 'would practically mean the extension of our coast-line into the very heart of our country.' He also urged the development of those natural inland waterways connected largely by canal, which lie just back of the whole eastern and southern coast. To this end he appointed an Inland Waterways Commission, which went immediately to work to make the most exhaustive investigation and report, while much subsidiary work was being done by the Bureaus of different Departments.¹

¹ After this Commission was appointed, with elaborate instructions, report was made to the President, who in turn sent the following in a message to Congress on the Inland Waterways:—

'I transmit herewith a preliminary report from the Inland Waterways Commission, which was appointed by me last March in response to a widespread interest and demand from the people. The basis of this demand lay in the general and admitted inability of the railroads to handle promptly the traffic of the country, and especially the crops of the previous Fall.

'This report is well worth your attention. It is thorough, conservative, sane and just. It represents the mature judgement of a body of men exceptionally qualified by personal experience and knowledge of conditions throughout the United States, to understand and discuss the great problem of how best to use our waterways in the interest of all the people. Unusual care has been taken to secure accuracy and balance of statement. If the report errs at all it is by over-conservatism. It contains findings, or statements of facts, a number of specific recommendations, and an account of inquiries still in progress, and it is based in part on statistics and other information contained in a voluminous appendix. The subject with which it deals is of critical importance, both to the present and to the future of our country.

'Our river systems are better adapted to the needs of the people than those of any other country. In extent and distribution, navigability and ease of use, they stand first. Yet the rivers of no other civilized country are so poorly developed, so little used, or play so little part in the industrial life of the nation

The unqualified good nature and complacency of the American people of the Mississippi basin, which constitutes one-half of the States in the Union, holding half as those of the United States. In view of the use made of rivers elsewhere, the failure to use our own is astonishing, and no thoughtful man can believe that it will last. The accompanying report indicates clearly the reasons for it and the way to end it.

'The Commission finds that it was unregulated railroad competition which prevented or destroyed the development of commerce on our inland waterways. The Mississippi, our greatest natural highway, is a case in point. At one time the traffic upon it was without a rival in any country. The report shows that commerce was driven from the Mississippi by the railroads. While production was limited, the railways, with their convenient terminals, gave quicker and more satisfactory service than the waterways. Later they prevented the restoration of river traffic by keeping down their rates along the rivers, recouping themselves by higher charges elsewhere. They also acquired water fronts and terminals to an extent which made competition impossible. Throughout the country the railways have secured such control of canals and steamboat lines that to-day inland waterway transportation is largely in their hands. This was natural, and doubtless inevitable under the circumstances, but it should not be allowed to continue unless under careful Government regulation.

'Comparatively little inland freight is carried by boat which is not carried a part of its journey by rail also. As the report shows, the successful development and use of our interstate waterways will require intelligent regulations of the relations between rail and water traffic. When this is done the railways and waterways will assist instead of injuring each other. Both will benefit, but the chief benefit will accrue to the people in general, through quicker and cheaper transportation.

'The report rests throughout on the fundamental conception that every waterway should be made to serve the people as largely and in as many different ways as possible. It is poor business to develop a river for navigation in such a way as to prevent its use for power, when by a little foresight it could be made to serve both purposes. We cannot afford needlessly to sacrifice power to irrigation, or irrigation to domestic water-supply, when by taking thought we may have all three. Every

its population, began to be disturbed a few years ago because the product of farm and factory was increasing so much faster than transportation facilities that it became impossible to carry the increased product of their industry to market. The transportation problem, both in its economic and political phases, has been growing more acute year by year, until President Roosevelt's active campaign began in the interests of the people. Even the railroad managers themselves complained of their lack of equipment to do the country's business, as is shown by the single remark before quoted from James J. Hill, that there was not money enough in the world to lay the track to take the traffic the country offered. It is no wonder that the farmers of the wheat belt and those dependent upon them complained if their wheat was rotting in the bins for want of cars to carry it to market; if the maize of the corn belt was rotting in the cribs, or being burned for fuel in the stoves of the farm-houses; and if the cotton

stream should be used to the utmost. No stream can be so used unless such use is planned for in advance. When such plans are made we shall still find that, instead of interfering, one use can often be made to assist another. Each river system, from its headquarters in the forest to its mouth on the coast, is a single unit, and should be treated as such. Navigation of the lower reaches of a stream cannot be fully developed without the control of floods and low waters by storage and drainage. Navigable channels are directly concerned with the protection of source waters and with soil erosion, which takes the materials for bars and shoals from the richest portions of our farms. The use of a stream for domestic and municipal water-supply, for power, and in many cases for irrigation, must also be taken into full account.'

(From the Congressional Record.)

of the cotton belt was heaped away unsold, because the railroads, taking advantage of the situation, charged all the stuff was worth to haul it. No wonder they complained when there was a fuel famine over a dozen Western States, and farmers were burning their furniture and farm products, and some of them were freezing to death, because there were no cars to haul them coal, and if, at the same time, the railroads were being centralized through blind pools and other inventions of new and devious methods of modern finance to put more railroads into fewer hands, with more irresponsible power of watering stock and inflating tariffs to pay dividends on them. No wonder that there was a movement in the whole Mississippi basin, in which, through 'River and Harbour Congresses', 'Trans-Mississippi Congresses', 'Lakes to Deepwaterways Associations', 'Deep Waterway Conventions', &c., this population of forty millions made their protest, and said to the Government at Washington, 'We must have transportation, and we must have a rate which will let us live. If you don't want to undertake the job we will do it ourselves, only we must have transportation and living tariffs.' Out of the tremendous activity and discussion on the platform and in the Press which attended this movement and followed it, arose the growing revolt against the prodigious waste of the *laissez-faire* policy. And out of this discussion, too, could be marked the progress of the increasing determination to organize the national assets and conserve and utilize the natural resources, especially those so obviously available as the navigable deep waterways of the Mississippi Basin, whose channels

Nature has digged so conveniently in their ramifications for the uses of this great area.

As the public education on this subject grew out of the matter of transportation and the intolerable situation which it presented, so, again, one of the most important results of the whole movement will be a question of transportation. For the perfection of this scheme, which includes as one of its subsidiary measures the main idea of national and international waterways, is the Panama Canal. The perfecting of the Panama Canal and the Lake Michigan Canal, the canalization of the Illinois River, the perfecting of the channel of the Mississippi itself, and the deepening and otherwise perfecting of the channels of its larger tributaries, will furnish the backbone of the great conservation scheme. So that, as far as transportation is concerned, steamers from Honolulu and Yokohama can load their freight at Duluth and Fort William, Toronto or Buffalo, and freight may be carried direct from the wharves of Minneapolis or Chicago, Pittsburg or Omaha, to Bombay, Liverpool or Hong-Kong.

Back of this great transportation idea are also the problems toward the headwaters of the rivers where the products for transportation are grown or made. For example, it is very interesting to study the relation of the mere conservation of waters to the building of dams or reservoirs among the thousand sources of headwaters, which shall, of themselves, serve a score of uses. For instance, one of the most obvious things to any one who will take the trouble to think about it, is the dynamic value of water. And if every pennyworth of coal saved

is a pennyworth digged, it will readily be seen what a saving of the coal-beds will follow the scientific use and development of the wasting water power of the country. Whenever a rainstorm, for example, has left a million tons of surplus water over a given area and over and above that which soaks into the soil at, say, an altitude of 2,000 feet, it is plain that this body of water will expend as much energy in getting back to the sea as the sun has expended in lifting it to this height, or as the mechanical devices of men might expend in lifting a million tons 2,000 feet high. But the energy of the sun has already lifted this water, and there it lies of so much potential dynamic value. The question is—How shall we utilize the particular energy which the sun has stored in this particular way, so that we may relieve the too wasteful use of that other particular form of energy which the sun has stored in coal?

Mr. Roosevelt's solution is simple and laconic: Drive wheels. This is good nation housekeeping; it is therefore good politics.

Herein, I think, lies the greatness of Mr. Roosevelt—that he has all the qualifications of a great politician. Of course, when I am speaking of a great politician to an Oxford audience, it will be taken for granted it is in the Aristotelian and not the American sense. The first qualification is creative imagination. This bridges the gap between science and philosophy. Add to this, ethical insight, sanity of judgement, and a daring which knows no bounds save those of righteousness and the common good, and you have the ideal politician, if he also happens to be a scientific geographer.

AGRICULTURE

Behind the advent of that political party which Mr. Roosevelt represents, and through which he has done so much to develop the principles of Alexander Hamilton, both extensively and intensively, lie in the background of the ages the swarming millions of those who, without hope and with little intelligence, have tilled the soil for their own daily bread, and for the daily bread of the world—peasants and yokels for the most part, helpless slaves in the ignorance and in the weakness of their individualism. For still other centuries this unfortunate class of men might have ploughed the same dismal furrows, but that just about the time of the Civil War a group of politicians began to deny the infallibility of *laissez-faire* and the democracy of individualism; to overturn that theory of government which is the policeman's theory of government; and to dare the innovation of loaning the resources of the nation (after freeing one class of slaves) to lift from another bondage another class of slaves, which numbers now in the United States about six million families of those who till the soil. The new coterie lifted the stigma from labour and made of a rail-splitter their first President, who himself broke the shackles from three million slaves. Lincoln had not been president a year before he signed the Homestead Act of Galusha Grow, which gave the settler a chance over the speculator, which opened up the enormous area of the great West, and gave free homes and farms to millions of men and women who worked with their hands for their daily bread. This idea has since been developed for this

lowly and hardworking class of men into the most useful and the most brilliant scientific organization in the world. It has made as well one of the most romantic contributions of human genius to the welfare of the human race. Now the American farmer is no longer a 'hay seed'. He is a prosperous business man. In the past, farming was a last resource, now it is a dignified scientific profession. It is such because we have two thousand scientific men and trained experts probing the secrets of Nature, roaming the world, solving the problems of soils, waters, seeds, weathers, fertilizers, forests, plants, insects, and farm animals; the foods, diseases, and adaptabilities of all of them, in their affinities and possible permutations.

It is impossible in any brief space to give even the outlines of the vast work of this department. Its work is divided into many Bureaus, and these in turn into divisions, the Bureau of Plant Industry alone having thirty-two. The Weather Bureau, e.g., besides maintaining its central office in Washington, with about two hundred subordinate stations scattered over the United States, Alaska, Hawaii, and the West Indies, co-ordinates with it, by daily telegraphic reports, observations made in Canada on the North, Mexico on the South, in the Azores and Iceland, the western coast of Europe, European and Asiatic Russia, covering every day practically the whole of the inhabited portions of the North American Continent, the North Atlantic Ocean, Western and Northern Europe, and Northern Asia. With this substantial basis for the forecasting of the weather, the bureau issues storm signals, flood signals, and other meteorological information for the benefit of agriculture, commerce, and

navigation. The Forecast Division receives in charts twice daily telegraphic reports of the prevailing weather conditions throughout the field of observation, and is able to give reliable information to shipping through two hundred and fifty-five special storm-warning stations over and above all the weather bureau stations along the lakes and sea-coast. The Climatological Division, with more than thirty-six hundred meteorological stations, supplies, at the Government's expense, gratuitous information to all parts of the country by telephone, railway, telegraph, train service, regular mail service, and rural free delivery. There are many other divisions of this one Bureau, each with its special and valuable work.

The Bureau of Animal Industry covers everything relating to the live-stock industry. It deals with the investigation, control, and eradication of diseases of animals, the inspection and quarantine of live-stock, the inspection of meat and meat-food products, with animal husbandry and dairying. The Bureau has been able, from time to time, to stamp out diseases of cattle which have threatened the whole cattle industry of the United States.

The Meat Inspection Division is now carried on at 702 establishments in 196 cities. Closely allied to this is the Pathological Division, studying the pathological diseases of animals, and the Division of Zoology, which collects and describes animal parasites of all kinds; the Experiment Station, studying all these questions in their bearing on the public health, and questions of heredity in animals and the making of better and stronger stock. Closely allied to this is the Animal Husbandry Office,

dealing with the breeding and feeding of farm animals and poultry, &c.

It is impossible to outline the thirty-two separate and distinct groups constituting the Bureau of Plant Industry, through which plant life is studied in all its known possible relations to agriculture. There are laboratories of plant and forest pathology, investigations of diseases of fruits, plant-life history investigations, together with experimentation in cotton breeding, corn, tobacco, drugs, and poisonous plants and tea culture, sugar beets, fruits, grains, forage crops, &c., with other groups devoted to farm management, crop technology, soil bacteriology, water purification, alkali and drought resistance, and many other useful lines of work.

The Bureau of Chemistry is conducting original investigations on hundreds of different lines, which have already resulted in untold good to the public health, to the prosperity of the American farmer, and is adding every day contributions to the stock of scientific knowledge of the world.

The Bureau of Soils has surveyed and mapped and analysed the soils with reference to their utilities, always in connexion with their climatic surroundings, 147,107 square miles of land in forty-seven States and Territories. It sends out circulars and bulletins and reports containing detailed descriptions of soils and agricultural conditions, with suggestions for the improvement of crops and methods of cultivation, with large scale lithograph maps showing the distribution and the relations of soils to climate and organic life.

The Laboratories take up such questions as alkali and

fertilizers, and with the many experiment stations offer free to the whole people invaluable information on soil management, utilization, erosion, and questions of fertility.

The Bureau of Entomology, or the ' War Department ', in the field of agriculture, is what we might call the Government Bug Industry, and has a fascination all its own. There are bugs which destroy plant life and animal life. There are big bugs and little bugs. It costs the farmer to feed these terrifying and insidious armies of Lilliputian Huns and Vandals more every year than it costs to run the United States Government, including the Pension Roll, the army and the navy, and this for the vegetarian bugs alone. This does not count those which leave with man and beast their trail of disease and death. In the old days of *ante-paternalism* and *anti-paternalism*, days of every farmer for himself and the bugs take the hindmost, the black-scale and the grasshopper, the chinch-bug and the Hessian fly and Texas fly swept unhindered over the domain of the farmer, his homestead open at every angle of his ignorance and his prejudice and his individual helplessness, and the last scenes of the tragedy were generally seen in the auction advertisements, the sheriff's hammer, and the pathetic procession of the old man and his wagon full of children driving down the road, if he had saved so much as a horse, to begin life over again as somebody's hired man. Now he drives an automobile, sends his sons and daughters to college, and the bank complains that he loans instead of borrowing money.

The farmer has been feeding about two hundred million pounds sterling a year to one sub-division of his bugs. Nearly half this much is saved to him every year by the

Bureau of Entomology alone. In other words, because the United States Government is in the hands of those who believe in the *social organism* instead of a *social atomism*, this one department of Government has revolutionized agriculture and has placed the status of the farmer's prosperity upon scientific and permanent foundations.

The wealth of the American farmer to-day is about six thousand million pounds, almost thrice the total wealth of the whole United States before the Civil War. The product of the American farm last year was 25 per cent. on even this enormous investment, and the values of the last year's product of the farms of the United States were fifteen hundred million pounds. The American farm has produced enough in 1908 to give £100 to every family in the United States.

Such has been the intelligence and vigour and disinterestedness of the administration of agriculture under Secretary Wilson, that in Mr. Roosevelt's term of office, in the single item of live-stock alone, the values have increased from four hundred and fifty million to eight hundred and sixty-six million pounds sterling. This is largely due to the dissemination of free scientific literature to the farmers, and other actual national assistance in combating the diseases of farm animals. The three crops of wheat, maize, and oats alone have increased to the value last year of two hundred million pounds over the value of those three crops upon the year President Roosevelt was sworn in as President of the United States. During the same period the value of farm land has increased about 32 per cent., or from 3,300,000,000 to

4,550,000,000 pounds sterling, and this has been due largely to the study and dissemination of literature and practical field help given by the nation to the farmers in studying the plant diseases and combating plant enemies.

Two of the most useful laws which Mr. Roosevelt has succeeded in driving through Congress and successfully running the gauntlet of every interest involved are the Meat Inspection Act and the Pure Food Law, the latter conducted by the Hon. Mr. Mann. Taking at random a period of four years, the Bureau of Animal Industry inspected two hundred and twenty-seven million animals per year, and one hundred and forty-eight million for slaughter. I find in a report from the Bureau a certain table of the causes of condemnation of carcasses, in which, roughly speaking, nineteen thousand cattle, twelve thousand sheep, four thousand calves, and ninety-one thousand hogs, besides as many parts of each, were condemned and thrown away on account of the presence of forty-five different diseases. These diseases included tuberculosis, cholera, Texas fever, erysipelas, cancer, tumour, abscess, gangrene, tapeworm, trichinae, and thirty-five others.

Under *laissez-faire* we used to eat all this.

And we didn't know what was the matter with us !

It is impossible to give, in anything less than a volume, an adequate idea of what this Department alone has done, is doing, and will continue to do, for the American farmer.

The Post Office Department has made its own contribution in these seven years of Roosevelt by increasing the number of Free Rural Delivery Mail Routes from eight thousand to over forty thousand. The President

has just called a Commission on Country Life to make an exhaustive study of the conditions of rural life, of what is possible to be done by the Government to eliminate the element of isolation and loneliness, to introduce telephones, parcel post, better roads, and other measures to help forward that movement upon which the whole future of civilization depends—the movement back to the land.

More advances in agriculture have been made in one generation than have been made before, since the Red Indian ploughed his maize with a stag-horn and hoed it with a clam-shell, or invoked the rain with the incantation of a howling dervish. All the past has not performed the miracles with the soil which science has wrought in forty years, and all the literature of science, so far as I know, holds no more charming tale than that buried in the Government stacks of plain black cloth and paper-covered Farmers' Bulletins, and United States Agricultural Reports and Year-Books—the romance of science and the soil—of the making of two farmers grow where one grew before. Let some one sing us a new song now,—‘The man with a plough.’ He is the foremost figure in the landscape, this belated scientist ; and he is such solely and only because the American world made up its mind that in this field at least, individualism and *laissez-faire* are played out. No sturdier blow has ever been given to the shabby pretensions of *laissez-faire* than that by the Department of Agriculture of the United States.

FORESTRY

The annual growth of wood in our American forests does not average more than twelve cubic feet per acre, or the total annual growth is less than seven billion cubic feet. But we are taking twenty-three billion feet from the woods every year. 'We use each year 100,000,000 cords of firewood, 40,000,000,000 feet of lumber, more than a billion post and fence rails, 118,000,000 hewn ties, one and a half billion staves, over 133,000,000 sets of heading, nearly 500,000,000 barrel-hoops, 3,000,000 cords of native pulp wood, 165,000,000 cubic feet of round mine timbers, and one and a quarter million cords of wood for distillation.'

This is *used* every year. What we waste is appalling. An average of fifty million acres of forest has been burned over yearly since 1870, and the annual average loss by forest fires for that forty years has been fifty lives and £10,000,000 sterling worth of lumber. But the waste in lumber production is even more startling, because wholly unnecessary and avoidable. In the case of yellow pine alone, in 1907, it is estimated that only one-half the cut was used, and eight million cords wasted, 20 per cent. of the whole cut having been left on the grounds in the woods to rot—a waste representing the entire output of 300,000 acres in the matter of yellow pine for the year 1907 alone. And there is still more criminal waste at the mill. Only 320 feet of lumber have been used for each thousand feet that stood in the forest. Enough timber is destroyed by fire every year to last the nation for three months, and, not counting

the losses from forest fires, we are using up three and a half times the yearly growth. The condition of the world's supply of timber makes it more and more necessary to become self-sufficing, or to do more and more without the use of wood.

There is a vital relationship between forest and stream in any rational economy. The problems cannot be separated, therefore they must be co-ordinated. The inhabitants of the Mississippi flats are among the first to suffer from the tree thief and the land-skinner among the countless tributaries. There is inseparable relation between river-bottom or desert plain and the wooded mountain of far-away interiors.

High up in the forested cañons Nature has built her great sponge reservoirs and her dams of moss and fern. Above these yet, are the ice and snow. Here open thousands of tiny sluiceways for the oozing waters that have been let loose from melting snow and falling rain. Soaking deep, the sluggish and reluctant waters flow from their cool retreats down into the brooks, these into the larger streams, whose replenished banks guide them from their natural reservoirs into the plain. How different the cañons and gullies of the treeless and arid regions, scenes of alternating forms of desolation ! When it does rain, which is not often, a thousand streams pour like water off a tin roof, to expand below into an inundation in an hour, to sweep swift destruction through the valley, to subside at once into a blister on the plains, to parch there like the forsaken victim of illicit love.

All at once and all over with a mighty uproar,
And this way the water comes down at Ladore.

A striking comparison of the types of water-supply was given by J. B. Lippincott, Supervising Engineer of the United States Reclamation Service, at the Forestry Congress in Washington recently. He says that Queen Creek, Arizona, discharges through a barren, treeless drainage basin of one hundred and forty-three square miles, in violent freshets and floods, subsiding almost as rapidly as they arise. During most of the year the channel is dry. In contrast is Cedar Creek, Washington, with the same drainage area. It is heavily timbered, and in addition the ground is covered with a heavy growth of ferns and moss. The total annual rainfall in Washington Creek of 1896 was eight times that of the Arizona Creek, yet the maximum flood discharge per second is only 3,600 cubic feet for the former, while that of the latter was 9,000 cubic feet per second. The mean discharge from the Arizona Creek was fifteen cubic feet per second, that of the other 1,089 cubic feet per second.

The Forest Service has undertaken, as one phase of its task, the solution of the problem of floods in rivers. For instance, I saw the Kansas river floods of 1903, which destroyed £4,000,000 worth of property and one hundred lives. One of the most fertile valleys on the continent, one hundred and twenty miles long, was partially destroyed. Here the rich soil was cut away, there it was covered with sand six and eight feet deep over the fields; holes were cut out and lakes left behind. Out of the 250,000 acres of wonderfully fertile soil, ten thousand acres were completely destroyed, ten thousand more lost 50 per cent. of their value, and the uncertainty left behind depreciated the value of the whole valley.

The Forest Service has devised systems of tree-planting for the river banks, the sand-covered and deeply eroded lands. The object of the first is to prevent washing of the banks, to protect the whole area from the full force of the floods, and, in time of overflow, to check the tendency to cut new channels. The last two systems are for ultimately reclaiming the now destroyed lands and making them productive. The useless sand lands will grow cottonwood and reclaim the land for crops. A most interesting discovery was made after this flood ; where the protected growth of cottonwood, which had not been cut away, checked the rush of flood waters, the land beyond was generally covered, not with sand, but silt, and was often more fertile than before. With extensive planting of trees another flood would bring back, instead of further desolation, a return of fertility to much of the land now barren.

Says Mr. F. H. Newell, Director, U.S. Reclamation Service, 'In six years the Government has reclaimed 250,000 acres, upon which are now living 20,000 people, representing 4,000 families. It is a reasonable estimate that, in another decade, 2,000,000 more acres may be reclaimed, upon which 250,000 more human beings may maintain themselves in reasonable comfort.

'The water for this work comes chiefly from streams rising in mountains. To maintain the supply of this water, it is essential that forests be maintained upon these mountains. To this end National Forests are indispensable.'

Addressing the National Rivers and Harbours Congress, at Washington, D.C., on December 4, 1907, M. J. J.

Jusserand, French Ambassador, said : ' It is an absolute principle—no forests, no waterways. Without forests, regulating the distribution of waters, rainfalls are at once carried to the sea, hurried sometimes, alas ! across the country. After having devastated the neighbouring fields, the rivers find themselves again, with little water and much sand ; and with such rivers how will you fill your canals ? . . . The question is as clear as can be : Do you want to have navigable rivers, or do you prefer to have torrents that will destroy your crops and never bear a boat ? If you prefer the first, then mind your forests. We can tell you, for we know. . . .

' If the Mississippi is the " Father of Waters ", the forest is the father of the Mississippi.'

Mr. Roosevelt was the man who discovered that a National Conservation Policy, which must include a National Forest Policy, is all that stands between the United States and the speedy destruction of whatever foundations of wood the national utilities and industries rest upon. Through his direction, the Forest Service has been familiarizing itself with the entire public domain, to determine its highest measure of utility. This study is thorough and scientific, and includes both general and specific problems of the forest and its product, and every possible relation they sustain to the nation and to the individual. In short, it is concerned with every possible relation existing between civilization and the tree. The service is replanting denuded forest areas, starting new ones, and conserving old ones. It studies the tree and its relation to the drought and the flood, to the irrigation of arid land and the encroachment of

sand dunes, as well as to the inundations of the freshet. It tells the man who owns timber land how to get the most out of it ; the farmer who has none, what trees to plant, and how. It shows the lumber-man how to avoid waste, and the mill-man how to save. In short, it has made possible the perpetuation of the utilities and industries and comforts dependent upon wood. It has taught the lumber-man there is no future to his business if there is no future to the tree, and that the lumber-man must fall in line with the Federal Forest Policy, or go out of business for want of one. Mr. Roosevelt said at the American Forest Conference in Washington, January 2, 1905, ' I ask, with all the intensity that I am capable of, that the men of the West will remember the sharp distinction I have just drawn between the man who skins the land and the man who develops the country. I am against the land-skinner every time. Our policy is consistent—to give to every portion of the public domain its highest possible amount of use.'

The Forestry Service controls over 70 per cent. of the forests publicly owned by the United States, but less than 1 per cent. of the forests privately owned. This gives a total of only 18 per cent. of the total forest area of the United States, covering about 550,000,000 acres, over which there is any scientific oversight, promotion of utility, or prevention of waste. The political principles of competitive anarchy and patriotic nationalism are here thrown in such dramatic contrast that the mere statement of the problem should furnish a self-evident basis for its solution.

It is impossible to exaggerate the seriousness of the

menace to the business interests of the country in the possible failure of the lumber supply. Every human interest, from agriculture, transportation, building, manufacture, commerce on the land, to the sailing-vessel on the sea with her cargo of wooden nutmegs, is directed and vitally affected by the forest sources of the wood-supply at living prices.

We have not been accustomed to think of the wood industry as such an indispensable basis of our industries as iron. We have looked upon agriculture and iron as our two most important economic corner-stones. But our cities and our shipyards use more wood now than even before the day of steamboats or steel girders.

My attention has been called by Mr. Smith, Chief of the Editorial Division of the Forest Service, to the fact that while the census shows an annual output from the logging camps of only about one-half the value of that of the iron mines, viz. £74,000,000, this takes no account of the vast amount of timber not for the general market but for local consumption—worth, probably, in the aggregate, at least as much more. Moreover, as we use iron we use it up. So it was once with the forest. Fresh supplies of timber were available only in new territory. First the north-east, then the Lake States, then the south, were swept clean of any great reserve. Only the Northern Pacific Coast was left. Soon this would have been gone under the awful warfare with which these private interests have vandalized the past and jeopardized the future. No one who has read the history of the Forest Service, and, as well, that of the ‘land-skinner’, can hesitate long as to whether ‘State interference’, or *laissez-faire* (to use

the larger meaning of the term) is better politics, and as to whether competitive anarchy or patriotic nationality is the better guiding principle in public affairs.

It is pretty certain that, but for a National Forest Policy, backed up by the nation, the greed of the land-skinner would soon have laid bare our Western States, as it has stripped the Eastern and middle States, and deprived the arid region of the West of a stable water-supply.

Every true American has felt the elemental sorrow of Leatherstocking, driven to the Far West because the sound of the woodsman's axe which had driven him from his forest home, still in the clearings, hurt his ears ; and a lonely old man with his silent laugh and his silent grief, sorrow-stricken still in the far prairie at the sound of a falling tree. There is real tragedy here. This is a common feeling. But this sentiment has never been organized. There has been a necessity for this, for sentiment still rules the world. A growing national sentiment is behind the whole work of the Forest Service.

A national sentiment is not a national *sentimentalismus*. The pioneers of forestry, in creed or deed, have entertained no geographic grief that the dryads are dead, or that the wan shapes of the hamadryads are wandering like lost ghosts among the ragged and unroofed stumps of so many a deserted waste. We entertain a sentiment of patriotism, a religion, for the restoration of the beauty, the utility and the dignity of the land. But for the forest, which was the glory of the nation's youth, what would that land have been to-day? What would it have been to-morrow? Surely another domain. It

furnished the fortress to protect the early pioneer from the arrow of the treacherous foe. The life of the nation's youth was nurtured in the forest. And, more or less, in every home on the continent to-day some forest product furnishes shelter.

By the substitution of the geographical economist for the land-skinner, the principle of nationalism for a competitive anarchy, we can not only produce a supply of timber four times as great as we produce now, and sufficient for our national needs, but we can kill several other birds with the same stone, as it were, for upon this central economy depends the usefulness of the streams of the continent for navigation, water-supply, irrigation and power.

RECLAMATION

Out of this work, and alongside this work, has been developed, and is being developed, the great national undertaking known as the 'Reclamation Service', which has already made vast contributions to the prosperity of sixteen States and Territories.

President Roosevelt is the first president who ever mentioned the subject of irrigation in a message to Congress. This work is as much his own as any such work can be said to be the work of any one man. In his first message to Congress, after referring to the effects of forests on water-supply, he said,—'The forests alone, however, cannot fully regulate and conserve the waters of the arid regions. Great storage works are necessary to equalize the flow of the streams and to save the flood waters. Their construction has been conclusively shown

to be an undertaking too vast for private effort. Nor can it be best accomplished by the individual States acting alone.

‘Far-reaching interstate problems are involved, and the resources of single States would often be inadequate. It is properly a national function, at least in some of its features. It is as right for the National Government to make the streams and rivers of the arid regions useful by engineering works for water storage, as to make useful the rivers and harbours of the humid regions by engineering works of another kind. The storing of the floods in reservoirs at the headwaters of our rivers is but an enlargement of our present policy of river control, under which levees are built on the lower reaches of the same streams.

‘The Government should construct and maintain these reservoirs as it does other public works. Where their purpose is to regulate the flow of streams, the water should be turned freely into the channels in the dry season, to take the same course under the same laws as the natural flow.

‘The reclamation of the unsettled arid public lands presents a different problem. Here it is not enough to regulate the flow of streams. The object of the Government is to dispose of the land to settlers who will build homes upon it. To accomplish the object water must be brought within their reach.

‘The reclamation and settlement of the arid lands will enrich every portion of our country, just as the settlement of the Ohio and Mississippi valleys brought prosperity to the Atlantic States. The increased demand

for manufactured articles will stimulate industrial production, while wider home markets and the trade of Asia will consume the larger food supplies and effectually prevent Western competition with Eastern agriculture. Indeed, the products of irrigation will be consumed chiefly in upbuilding local centres of mining and other industries, which would otherwise not come into existence at all. *Our people as a whole will profit, for successful home-making is but another name for the upbuilding of the nation.*' (December, 1901.)

This is no place for even an outline of the history of Conservation, but it is well to note that irrigation has been practised in Egypt, India, Mexico, and many other lands for long periods of time. It is a proud heritage for any race, that wherever their flag has gone, there constructive and scientific work has arisen for the benefit of the peoples who had, from time immemorial, been subject to flood, drought, famine, plague. When was there ever so propitious a day for Egypt and the Soudan as when the British flag was planted there, with British engineering skill and British millions of pounds sterling? The dams and canals, channels and barrages already finished, with the new ones planned, have brought a prosperity and a peace to the North of Africa which never has been seen, and never has been possible in all the weary millenniums which have dragged over its thirsty wastes. Though there has been irrigation in India from time immemorial, it has been on a small scale. No vast projects were ever undertaken until the British occupation, such, for example, as the Chenab Canal, which irrigates 2,000,000 acres, or two-fifths as

large an area as all of cultivable Egypt,—a canal with six times the discharge of the Thames at Teddington. 13,000,000 acres of the 44,000,000 acres under irrigation in India are watered from wells, but the vast Government undertakings have become the main insurance against the recurrence of famine, that dread visitant in this overcrowded land.

The first Presidential Message to Congress recommending Government aid to agriculture was that of George Washington, in 1796, himself a member of the first agricultural society ever organized in the United States. He recommended 'a national board to encourage and assist agriculture . . . by stimulating private enterprise and experiment'.

The first Presidential Message recommending aid to irrigation and the national control of water-supply was the first message to Congress of President Roosevelt, December 3, 1901.

Legislation waited on Washington's recommendation forty-five years later, when Congress appropriated £200 for the purpose, which the Government took three years to spend! Within seven months after the recommendation of President Roosevelt, Congress enacted the most beneficent piece of public land legislation which has become a law since Abraham Lincoln signed his Homestead Act in 1862. Eleven days after the measure became a law, recommendations were made for the withdrawal from entry of areas in six localities to prevent speculative filings on them, pending an Act.

On the third anniversary of the passage of the Reclamation Act, on June 17, 1905, and within three years and

seven months of the first presentation to Congress by a Presidential Message of any plan for the national policy of the reclamation of arid lands by irrigation, water was turned on to 50,000 of the thirsty acres of Nevada, the first section of this national project to be completed. This is known as the 'Carson' project. A very interesting incident in connexion with the digging of the ditches of this project illustrates the value of the Hydrologic Survey. This irregular tract comprises a flat desert, which lay in the line of the immigrants' trail to California about the time of the gold discovery. There were here forty miles of country where never a drop of water was to be found. It was several days', and sometimes many days' journey, with horses or mules or oxen, and every drop of water used had to be carried with them. Not all the immigrants knew this, and the consequence was that hundreds perished, with thousands of animals, and very often the only monument left to mark the spot where some father, mother, son, or daughter, had perished and was left six feet deep in this desert soil, was an old gun-barrel or steel ramrod to mark the place. Three wagon-loads of such pathetic mementoes were recovered from the digging of the main ditch. But the Hydrologic Survey has ascertained the fact by this time that this entire region, in fact almost the whole of Nevada, contains vast quantities of underground water, and had any one out of those thousands of sufferers digged a grave six feet deeper, he would have found a well of life-giving water.

It is believed by the Hydrographers who have surveyed the States, that the artesian water from the underflow of the streams and valleys can eventually be utilized

for irrigating an additional 1,600,000 acres in Nevada alone, very much the greater part of whose land surfaces are so arid that they have hitherto been considered as irreclaimable desert.

Mr. C. J. Blanchard, Statistician of the United States Reclamation Service, writes in a picturesque way of that far south-western corner of the United States, 'where everything bears mute evidence of a terrible struggle for life. It is the land which some one called "The land that God forgot". Everything that grows is covered with a thorn; everything that crawls is deadly. It is a topsy-turvy wonderland. We may not drink of the waters of the desert stream, for they are salty. In this strange region they dig for wood and climb for water, for the water is found in cup-shaped pools in the hills, and the wood is the big root of the Mesquite.'

Down here somewhere is where the Salt River has cut through the mountains a narrow gorge, in which the Government is putting a dam of cement and sandstone, which will rise 284 feet above the river. This dam will be 170 feet thick at the base, 1,080 feet long on top, with a roadway 20 feet wide across it.

Down in the bed of the cañon is the city of Roosevelt, with its schools, churches, and houses, with electric lights, waterworks, and modern equipments, built by the Government for the dam-builders, which will soon lie 220 feet deep in the new inland sea, from which canals will carry water to assuage the desert thirsts below.

Every one of the twenty-eight Government projects which are scattered over the whole Western half of the United States presents some new and interesting engineer-

ing problem to be solved, as, for example, the Uncompahgre Project in Colorado. The Uncompahgre and the Gunnison Rivers flow parallel, about ten miles apart, with a mountain range two thousand feet high between them. The former river, which has only a small amount of water, flows through a broad and fertile valley containing several hundred thousand acres of cultivable soil. The other river, with much more water, flows through a cañon with very little land. The problem of getting the water out of the Gunnison River over a two thousand foot mountain range into the broad acres of the Uncompahgre Valley was the unique problem to be solved. In spite of the almost insuperable difficulties, where men had to be lowered by ropes hundreds of feet into the cañon, a tunnel six miles long is being cut through, ten and a half by twelve feet, and this year one hundred and forty-eight thousand acres of this land will be irrigated and thrown open to the settler.

Again, near Yuma, Arizona, a portion of the waters of the main canal on the California side will be carried under the Colorado River by a siphon for the irrigation of Arizona lands.

Any detailed account of one, or of all, of these twenty-eight Government projects, forms a subject and a task by itself. This is not the place to recount the details of all the different projects undertaken under the new national policy by the United States Government. But this much is certain, that the initiation of the project considered as a Government enterprise is another silver screw in the lead coffin of *laissez-faire*. It is sufficient to say that within seven years after the first recommendation

ever made by a President to a Congress on the subject, many thousand people have already made their homes on land that was once a desert, and considered worse than useless, and was the home of the lizard and the rattlesnake. There are 25,000,000 acres of land already planned by the Government into farms and homes and cities, and, according to the late Major Powell, there are 75,000,000 acres more of this land capable of such transformation, where many millions of people will be able to make their homes, and the whole thing done on such business principles as that in fifteen years longer it will not have cost the United States Government so much as the value of a copper halfpenny in principal or interest.

Surveys and perfected estimates have been completed for twenty-eight irrigation projects. Out of these, all begun, many are finished and are already producing abundant crops.

‘A summation of the work of the Reclamation Service for 1907 shows that it has dug 1,881 miles of canals, or nearly the distance from Washington to Idaho. Some of these canals carry whole rivers, like the Truckee River in Nevada and the North Platte in Wyoming. The tunnels excavated are fifty-six in number and have an aggregate length of 13½ miles. The service has erected two hundred and eighty-one large structures, including the great dams in Nevada and the Minidoka Dam in Idaho, 80 feet high and 650 feet long. It has completed one thousand headworks, flumes, &c. It has built 611 miles of wagon road in mountainous country, and into heretofore inaccessible regions. It has erected and in operation 830 miles of telephones. Its own cement-mill has manu-

factured 80,000 barrels of cement, and the purchased amount is 403,000 barrels. Its own saw-mills have cut 3,036,000 feet of lumber, and 23,685,000 feet have been purchased. The surveying parties of the Service have completed topographic surveys covering 10,970 square miles—an area greater than the combined areas of Massachusetts and Rhode Island. The transit lines had a length of 18,900 linear miles, while the level lines run amount to 24,218 miles, or nearly sufficient to go around the earth.

‘ The diamond drillings for dam sites and canals amount to 66,749 feet, or more than twelve miles. To-day the Service owns and has at work 1,500 horses and mules. It operates nine locomotives, 611 cars, and 23 miles of railroad, 84 gasoline engines, and 70 steam engines. It has constructed and is operating five electric light plants. There have been excavated 42,447,000 cubic yards of earth and rock. The equipment now operated by the Service on force account work represents an investment of a million dollars.

‘ This work has been carried on with the following force :

Classified and registered service, including

Washington Office 1,126

Labourers employed directly by the

Government 4,448

Labourers employed by contractors . . . 10,789

or a total of all forces of 16,363. The expenditures now total nearly £250,000 per month. As a result of the operations of the Reclamation Service eight new towns have been established, 100 miles of branch railroads have been constructed, and 14,000 people have taken up their residence in the desert.’ (From *The Statistician*.)

WASTE

Nothing in all the history of civilized nations in modern times has shown a wastefulness so reckless, so insensate, so criminal, as the wastefulness of the American people with the natural resources of their continent. The net result is the modern American billionaire and the imminent bankruptcy of the continental domain. Whatever gratitude posterity may cherish for institutions bequeathed, may be overcome by the indictments of the disinherited descendants of those who, in their insane scramble for immediate gain, have cried 'After us the deluge', and have burned the nation's patrimony.¹

¹ 'Our unsurpassed natural wealth and the eagerness of our people for immediate results, regardless of future needs, have led to a policy of extravagant consumption of natural resources, and to an encouragement of monopoly, whereby an excessive share of such resources have been diverted to the enrichment of the few rather than preserved for the equitable benefit of the many. Monopolistic tendencies have appeared: (a) in the extensive control of mineral fuels on public lands, whereby large values essential to the development of the country have passed beyond public regulation; (b) in the acquisition and needless destruction of forests, whose preservation is a public necessity for stream control, for timber supply, and for other purposes; (c) in the acquisition of controlling sites on waterways and the appropriation of valuable water powers, with their segregation from public use, without compensation, whereby indispensable utilities escape public regulation in the interests of the people; (d) in the segregation of lands, especially in the semi-arid regions, whereby development is retarded, so that the lands remain without benefit to commerce or advantage to the growth of the country; (e) in the control of products and of transportation to disturb the normal values and natural channels of trade, thereby imposing undue burdens on producers and consumers; and (f) in various interferences with the production and commerce of the country, whereby prosperity is curtailed

For a President to have discovered this ; to have been intelligent and forceful enough to have, in a measure, stopped it ; to have guaranteed our great-grandchildren the remnants of use left of a great geographical inheritance, is quite enough for one man in a lifetime to have accomplished.

The report of the National Conservation Committee, now in the hands of Congress, presents an appalling indictment of the political intelligence of the American people.

Three generations ago the American forest covered an area of a million square miles, one-third the land surface of the United States. Now there is not enough timber left to last the generation playing marbles in the school-yard.

Although the mineral production of the United States is second only to agricultural value, adding £400,000,000 per year to the national wealth, the waste in mining and treatment of mineral substances sum up an average

and progress impeded. While such monopolistic tendencies have been conspicuous in connexion with the agencies of transportation, they are now, in many cases, opposing the State and Federal jurisdiction in the public interests to personal and corporate means of excessive and burdensome profit. Since transportation is a primary factor in the existence and development of any people, and is increasingly important with the growth of population, it is essential that its means should be regulated in the public interests, and any plans for relieving congestion of transportation in the United States should be so framed as to employ all proper State, Federal and Municipal agencies in protecting from monopolistic control, not only the agencies and avenues, but *also the materials* of interstate commerce.' (From the preliminary report of the Inland Waterways Commission to President Roosevelt, February 3, 1908, and passed on to Congress in a special message February 26, 1908.)

loss to the American people of about £60,000,000 a year. The use of fuels which supply light, heat and power, owing specially to the fact that manufacturing has increased so rapidly, has itself increased much more rapidly than the population of the country. The available and accessible supplies of coal in the United States aggregate 1,463,800,000,000 tons. But this includes the poor coal ; we have been using the best and most accessible. We have already used $7\frac{1}{2}$ billion tons and wasted 9 billion tons of coal. The anthracite will hardly last twenty years, and the bituminous one hundred, at the present rate. But the use of coal is increasing almost as it were, in geometrical progression, for in the decade 1896-1905 almost as much coal was mined as has been produced during the whole previous history of the United States. In 1906 the consumption was 46 per cent. greater than that of the average of the preceding decade, and the next year, 1907, consumed sixty-six million tons more than was mined in 1906. Mr. Carnegie has said, 'Still more wasteful than our process of mining are our methods of consuming coal. Of all the coal burned in the power plants of the country, not more than from 5 per cent. to 10 per cent. of the potential energy is actually used. . . . Indeed, in ordinary electric light plants, hardly one-fifth of one per cent., one five-hundredth part, of the energy of coal is actually utilized.' Dr. I. C. White, State Geologist of West Virginia, said at the White House Conference, speaking of the waste of natural gas, 'From personal knowledge of conditions which exist in every oil and gas field, I am sure the quantity will amount to not less than one billion cubic

feet daily, and it may be much more. The heating value of a billion cubic feet of natural gas is roughly equivalent to that of one million bushels of coal. What an appalling record to transmit to posterity.'

'There can be no doubt that for every barrel of oil taken from the earth there have been wasted more than ten times its equivalent in either heating power or weight of this, the best of all the fuels, and also that much more than half of this frightful waste would have been avoided by proper care in oil production and slight additional expenditure.'

The United States is turning out nearly half the iron product of the world, and at a rapidly increasing rate, promising absolute extinction, at the present rate of consumption, in forty years. Inasmuch as there is no reason to suppose that the world will come to an end before that time, there is an imperative call for the geographical economist to take a hand in this insane scramble of individualism.

The loss to farm products due to injurious mammals is something like £26,000,000 annually, through plant diseases approximately £80,000,000, and through insects £134,800,000 each year.

Water is one of the economies of the nation, as vital to our existence as the air we breathe. The sun lifts from the ocean and spreads out over the United States, in the form of rain or snow, two hundred and fifteen trillion cubic feet of water every year. One-half of this is evaporated, a third of it flows into the sea; the other sixth is absorbed or consumed. Out of the seventy trillion cubic feet annually flowing to the sea, less than

1 per cent. is harnessed and utilized for local purposes, and less than 5 per cent. is used for navigation or power. What becomes of the rest? The question as to whether it shall be economized and used, or wasted and allowed to devastate the land, shall be decided in the future, on the basis of the nation's verdict concerning nationalism versus individualism. Over sixty trillion cubic feet of the seventy trillion cubic feet are not only absolutely lost to all intelligent purposes of a rational government and an economic civilization, not only are they unused for irrigation, navigation, and power, but they exhaust themselves in the wholly avoidable devastation of freshets and floods. With the recent denudations of the forest covers of our water-supplies the steady increase in the yearly damage by floods is startling. Since the year 1900 this annual damage has been steadily increasing from nine million pounds to forty-six million six hundred thousand pounds per annum, with the indirect losses running into figures very much higher than these. It is estimated that the annual loss to farmers alone in soil erosion is £100,000,000, and that the billion tons of soil matter annually carried into lower rivers and harbours, or into the sea, is all of it taken every year off the farms and lands of the country, resulting in even greater losses in the pollution of waters and the impediments of navigation and terminal transportation uses.

This waste of the soil touches the foundations of all and every civilization. The water flowing to the sea goes back to the land from the sea; the soil never does. The water, as it were, is the devastating agent, the soil

the victim. So that as the continental plains are being torn down the ocean beds are being filled up. The water returns to the soil, but the soil remains in the sea.

One of the most important problems, therefore, is to keep the thousand million tons of annually eroded soil on the land which needs it, 400,000,000 tons of which is being emptied into the Gulf of Mexico every year through the Mississippi River alone. When we remember how much of the top of the superficial area of the North American Continent the Mississippi has carried to the Gulf of Mexico, and made a layer approximately a quarter of a mile deep, and laid it over an area of nearly a hundred thousand square miles of the Gulf coastal plain, we realize the importance of stopping the soil erosion, which has been increased rather than diminished by the wasteful hand of man. We must save those forests which Nature has providentially planted along the tens of thousands and hundreds of thousands of miles of tributaries and sub-tributaries, which the settler in his recklessness has been cutting away ; we must build great reservoirs in the Hinterland where the eroded soil may be deposited, where the water may be clarified and shorn of much of its cutting power, where the water which now stands for freshet and disaster may be held back until the river banks have been bared by the drought ; and we must turn these stored floods through the irrigating ditches to fertilize the desert, and over power wheels to make the ' wheels go round '.

Let it be remembered that it takes ten thousand years for nature to make a foot of soil, and that through our

blundering unintelligence we waste often in ten years what it will take Nature a thousand years to restore.

We are told that the possible horse-power in our streams is over 230,000,000, of which we use about 2 per cent. ; that there is enough of this available, i.e. 37,000,000 horse-power, even now, as cheap or cheaper than steam installation, to exceed the entire mechanical power in use in the United States, and to 'operate every mill, drive every spindle, propel every train and boat, and light every city, town and village in the country'. And there are over four times this much horse-power running to waste over the Federal Government dams alone.

Mr. M. O. Leighton, Chief Hydrographer of the United States Geological Survey, says, 'Our inland waters are our greatest national resource. The water flowing down our Western mountains far exceeds in value the fabulous wealth represented by all the metals and minerals lying between the Rockies and the Pacific.

'To-day most of this resource is wasted. Each year at least 1,600,000 horse-power runs over Federal Government dams. Rented at twenty dollars per horse-power, this would yield \$32,000,000. Capitalized at 3 per cent. it represents an investment of \$1,066,000,000 now wholly wasted.'

And yet, with an unintelligible and incredible parsimony, we refuse the initial investment which would utilize a large portion of the 98 per cent. of waste water-power, while we are using up our coal and gas and oil as if they would last for ever.

Out of the two hundred and fifteen trillion cubic feet of water annually raised by the sun and available for

human uses, it has been seen that 90 per cent. of the available dynamic power in foot tons of the seventy trillion of cubic feet are not only wasted so far as economic power and use are concerned, but are each year becoming a monster of destruction more ungovernable. The question of water-supply and conservation and use instead of avoidable disaster becomes one, therefore, of vital moment for the entire nation. It requires the immediate and intelligent and sustained attention of the legislative and executive departments of the country, as well as that of the whole people, who must decide at once between the patriot and the land-skinner. This is a subject that cannot even be approached from the point of view of the individualist. The problems here involved can never be solved without the element of intelligence and patriotism. This is a question of a simple political application of scientific knowledge to the matter in hand, in one great national scheme and purpose, in one continental view, for one universal aim and end, and that is 'The greatest good to the greatest number for the longest time'.

Government experts have estimated that a working capital is needed for the National Conservation Scheme of £100,000,000, that the income from water power alone would pay for the whole thing, or that the cost of half a crown a head a year would save fifty shillings a year in certain few avoidable losses. They claim that not only would the destruction of flood and freshets be practically eliminated, and hence this enormous loss be saved, but that such an undertaking, which it would take ten years to finish, besides preventing £30,000,000

per year of flood damage, £73,000,000 annually of loss by forest fires, or £200,000 a day, which could be prevented by intelligent management, would save also £50,000,000 annually alone in transportation if one-fifth the freight could be handled by water; and quite another £100,000,000 in the prevention of soil erosion and through other benefits to farm lands. In these items alone the expenditure of two and sixpence a year *per capita* would save two pounds ten shillings a year a head. This is making no account of the water uses in irrigation, the drainage of swamp and overflow land, and a purified and cheaper water-supply, and the consequent prevention of an enormous loss of human life from preventable disease, the economic gain from the mitigation of preventable disease being estimated at £300,000,000 a year. It is pointed out by these experts that there are many indirect benefits which would arise from these projects, e.g. the development of water transportation instead of that by rail would reduce the increasing consumption of ties and mine timbers, or iron and coal. Every farmer in the country would benefit directly from cheaper transportation. It has been estimated that the income derived from power developed by works for the improvement of navigation, would pay the entire cost of maintenance and continue further development, and pay interest on the expenditure of £100,000,000 as working capital. The full development of all the feasible water possibility of the country would furnish a power probably greatly exceeding five times the present total horse-power of all kinds in the nation, or 150,000,000 horse-power. In addition to the reclamation of 25,000,000 acres of

arid land, there are about 77,000,000 acres of swamp land now useless, but of inexhaustible fertility, which, if drained and thrown open to agricultural uses, would, allowing forty acres to each family, furnish homes for ten million people.

A working capital of £100,000,000 would save, directly and indirectly, £1,000,000,000 a year, and yield vastly more of economic good to the people and their posterity than can be reckoned in pounds and pence; and yet the land is infested with interests whose tools are in Congress, blocking this investment with the cry of 'Economy' and 'Deficit', with which they are blocking also the national defences, and then boasting that we have laid up more wealth in a generation than Great Britain in half a millennium, and own over a quarter of the world's wealth. What posterity will think of these enlightened and disinterested patriots may be imagined from the opinion of some of their contemporaries,—this Congress which has refused Mr. Roosevelt's request that £10,000 be voted for the maintenance of the National Conservation Commission. I believe the members of the Deep Waterways Commission worked for nothing and boarded themselves; otherwise we would never have had one.

CO-ORDINATION

A fair question to ask in estimating the value of any service, public or private, is 'How would it have been with us otherwise?' What the country was without the Reclamation Service we have seen who knew the arid West years ago. What American agriculture would have

been without national interference one could imagine who knows what farming was a generation ago. What the land would have been without a National Forest Policy the average man cannot imagine. Under the laws for which Mr. Roosevelt was responsible a hundred and twenty-two million acres of the public domain have been set aside to be held in public ownership for the public good, making one hundred and sixty-eight million acres in all of Forest Reserve. In connexion with this act of administration he sounded the note for the whole conservation policy. 'It is consistent,' he said, '*to give to every portion of the public domain its highest possible amount of use.*' This large domain is now held for *development and use*. These reserves are for the people. The land-skinner was abroad. It became necessary for Mr. Roosevelt when he came to office, not only to set aside the forest reserve, but to take the most vigorous measures to secure bona fide settlers in their rights, and to prosecute those who had unlawfully taken the land. During a period of five years of his administration, fences were removed unlawfully enclosing public land from 3,518,583 acres, and suits have been recommended on other actions, and steps taken to remove such enclosures, from more than an equal amount. During the administration something like a hundred thousand pounds have been collected by the Government for timber trespasses on the public lands, and legal proceedings taken involving trespasses of half a million pounds. During this time, there has been secured in public land cases, involving perjury, subornation of perjury, conspiracy, forgery, false affidavits, timber trespasses, and unlawful enclosures,

3,096 indictments, 871 convictions, with 251 prison sentences with many indictments awaiting trial. During the same period 7,874 fraudulent land entries have been cancelled, restoring over a million and a quarter acres to the public domain.

It was also found that large tracts of public coal lands were being illegally obtained. The President at once took measures to ascertain the extent and value of the coal areas, and the Geological Survey was directed to classify and value coal lands. It has been found that the Government still owns between seventy and eighty millions of acres of known coalfields of the West. The President immediately withdrew from all entry sixty-seven million acres of this land, and the Geological Survey fixed the prices at from two to twenty pounds sterling, which had hitherto been illegally acquired at from five shillings to four pounds per acre. This economic work of the administration, on the basis of the actual field investigation of the coal geologists of the Survey, has not only increased but has multiplied many times the return to the Government from the sales thereof, and has prevented monopoly of the coalfield.

Another very interesting item connected with these economic investigations is the Act providing for fuel and structural material tests passed four years ago. For example, the Survey has demonstrated the important fact that the low-grade bituminous coals and lignites, of which there are tens of millions of acres, formerly considered of but little, if any, economic value, can be converted into gas and used as gas fuel, with double the efficiency possible under the steam boiler. The item

that tens of millions of acres of coal have been doubled in value and made a national asset by one little scientific experiment successfully concluded by a Government Bureau could be duplicated in many other illustrations.

Under the new arrangements the mineral and agriculture and timber resources are available to the settler with strict provisions against waste. Throughout these large areas of the public domain, the Government has made large expenditures for roads, trails, bridges, houses, telephone lines, fire-fighting accessories, and other needs and conveniences.

The principle involved in the Roosevelt Conservation Policy, while carried out on strictly historical lines, and strictly constitutional principles, is, in its practical and in its political effect, almost revolutionary. While the Government is owner of these hundreds of millions of acres, it is not as the ordinary landowner. If owned by private interests the resources would be wasted in the interest of the immediate profit. At least, such is the verdict of experience. And it is because of such a verdict that a hundred and sixty-eight million acres have been withdrawn from private ownership to start a real *public domain* and for the *common good*. A fair beginning! These resources are to be developed, not in the interest of the Government as landlord, but in the interest of the present population and their posterity for ever, with the Government as Trustee.

Mr. Roosevelt has constantly insisted upon the most exhaustive and scientific investigation of all the water resources of the country. During the past year over five hundred stations have been maintained to determine the

average flow of the rivers towards their utilization in irrigation, drainage, and power, and for the development of inland navigation.

The integrity of the great irrigation works, built and being built by the United States Government, depends on the scientific accuracy and thoroughness with which the Hydrographic Surveys have been made.

The division of Hydrology or Hydrogeology of the United States Geological Survey, which was organized on January 1, 1903, deals with underground waters, on the same principles as the division of Hydrography deals with surface waters, and strictly scientific investigations were begun at once in about two-thirds of the States or Territories. The work is divided into six departments—the bibliographical, statistical, technical, legal, scientific, and economic. The scientific work seeks to solve such problems as the measurement of direction and rate of underflow by electrical apparatus; to make experimental field investigations of the general movement of ground water; to study the general movement of spring water; the relation of topography to underground drainage in regions of soluble rocks. The 'economic' deals principally with reports and maps on the location and extent of water-bearing horizons, the depth of water below the surface, and the height to which it will rise, the quality and quantity of the supplies, and problems relating to purity or pollution of the ground waters.

In close connexion with this work, also, are the features of rainfall, texture of water-bearing materials, and of adjacent land surfaces.

The economic results to be obtained from such studies

depend also on the general topography, the main direction and velocity of ground waters, &c., in order to furnish a basis for a requisite thorough knowledge of topography.

The Geological Survey is constructing a complete topographical map of the United States, in sheets of about 250 square miles, one of which is issuing every third day. Nearly two thousand of these sheets have already been engraved, and already more than one-third of the United States has been covered. This will be as complete a map as any in the world. It is the aim to do this work so thoroughly that one may be able to trace the course of every stream, locate every mountain and hill, with accurate knowledge of steepness and altitudes with reference to making it equally valuable to the engineers of irrigation or drainage systems or railroad extension, as well as to help the farmer who may wish to drain a swamp. To this sort of information the Geological Survey adds data, not only regarding rocks and soils exposed to the surface, but with remarkable accuracy shows what may be found at hundreds or even thousands of feet in depth.

The mapping of the Catchment basins presents problems which are both topographic and geologic. The determination of the geologic structure of the depth of water horizons and of the depth of flow of each water-well, are all of great value in outlining artesian areas, whose charts are reduced to folios which include topographical, geologic, and economic data, and are issued by the Geological Survey.

It must be remembered that before anything definite was done, practically the whole problem had to be stated. An enormous preparatory work of scientific investigation

must be laid down before the engineering work of construction could be even begun. To be sure, a great deal was already at hand, but in many fields it was pitifully inadequate. One must remember, also, that before Mr. Roosevelt's administration began, public opinion in the United States as to the Government taking the initiative, or assuming the responsibility of a great project like the Reclamation Service or the Forest Service, or the Inland Waterways Plan, was in a state of doubt or open hostility.

And there are still other problems to solve. Experts must be called, each to make his contribution toward the solution of the difficulties offered, from the Mississippi Delta through to Lake Michigan, and again from the muddy waters back to the very snow-drifts whence flow its primal supplies. There will be chemical problems, physical problems, geological problems, botanical problems, and engineering problems. There will be projects of swamp and sanitary drainage, the making of reservoirs for the developing of water power and for impounding potable waters and waters for irrigation and navigation supplies. There will be other works for protecting slopes, river banks, bottom lands, valleys, and plains, and for conserving their soils, and many other details and problems, and all of them subsidiary to the great geographical conception of opening up and artificializing and controlling the entire interior empire of the United States and Canada, tributary to the Mississippi and the Great Lakes. The idea of State Control, and the realization of the ethical possibilities under certain phases of state ownership, have grown more during the Roosevelt administration than

in all the rest of the history of the United States put together.

That Mr. Roosevelt has been able to accomplish so much of a definite and concrete nature which was dependent upon the technical surveys and investigations of thousands of scientific experts, and get this vast mass of material together and mapped out and organized and digested and transmuted into its proper engineering channels ; that he has been able practically to educate the nation on the subject, or put it in the way of being educated ; that he has been able not only to get so many concrete engineering works accomplished, and that he has been able to inaugurate so much of ethical legislation, and ethical administration, straight away in the line of the enlargement and moralization of the sphere of the State and the extension of the sovereignty of the State over the sphere of private exploitation, is one of the astonishing things to those who know the intensity of the individualism of the American people, in all the achievements of modern American history.

President Eliot said at Harvard quite recently, ' American people are opportunists ; they will adopt institutions, socialistic or not, if they are practical, but they will not follow an idea beyond the stage where it becomes inefficient.' All of this, and more, is exactly true, and President Eliot might have said that until the Roosevelt administration the American people were not, and even to-day are not, willing to follow an idea as far as it is efficient, or else they hesitated to make any new application of the idea, on the principle of keeping out of the water until they knew how to swim. But the time has come where

policies no longer answer. The opportunist temper is inadequate. We want an idea. World-making is no piecemeal *laissez-faire* individualist job. (The Roosevelt work is of one piece. It shows one mind and one idea. It requires that one mind and that one idea in the co-ordination of Scientific effort, in the direction of the investigations and observations for data, in the application of one administration towards the utilization of these data, and the framing of a single engineering scheme for its support by the national government—nothing less. The control of rivers and harbours cannot intelligently be left in the hands of one set of men in one department of the Federal Government, and that of the control of water sources and supplies left in another department of the Federal Government. This great work is of one piece ; it should be administered as one scheme.

A great and immediate need of the United States Government is a new Federal Department. Mr. Roosevelt created the department of Commerce and Labour. Perhaps Mr. Taft will create the Department of Public Works. Instead of being administered with more or less duplication and omission and economic loss by the Federal Departments of Agriculture, War, Interior, and Commerce and Labour, these functions, together with such new ones as are necessary, should be synthesized and co-ordinated under one Federal Department. While the results already achieved by the Government are brilliant, the mass of scientific data necessary to the intelligent administration of such a complicated scheme are still very meagre and imperfectly correlated. So vast a scheme, upon which so many scientists and engineering

experts are engaged, presents a complication and interrelation of problems which can be satisfactorily administered only by one Department under the control of one mind according to one overruling idea.

NATIONAL PROGRESS—RATIONAL, NOT FORTUITOUS

It should be apparent by this time that we have here a new kind of politics. What we have all been taught heretofore, when indeed we have been taught anything on the subject, has been political science. Just what this is, nobody seems to have a very clear idea, and for the most part it has been confined to a classification of historical systems. Although it has been vaguely and erroneously confused with political philosophy, the two are as separate and distinct as either one is from the study of history.

But here we have something different. Instead of political science we have scientific politics, and it seems to be what we have been waiting for a long time. To be sure, we can find scientific politics, as, for example, in Germany, where politics are rational and not fortuitous. But in the Roosevelt scheme scientific politics is laid on democratic foundations, or, perhaps, what would be just as accurate to say, democracy has been laid on scientific foundations. This new movement seems to have come not a moment too soon in the evolution of civilization.

A swift glance ahead one hundred years with Asia in possession of our industrial and military secrets, with its own unequalled natural resources untouched and our own squandered, should occasion a diurnal nightmare for the incredible unintelligence which refuses immediate expen-

diture of that £100,000,000 which will save £1,000,000,000 a year, and possibly the future of our race. The future belongs to those nations who own the soil and rule the sea—whose people shall have to use and not to abuse the natural resources of the earth. There is no future to any nation without these.

The time has come in the history of Western civilization for a new Politics. There is something wrong with our politics; there is something the matter with our theory of life—Individualism. Anglo-Saxondom, in particular, is losing ground, and on the racial escutcheon should be blazoned WASTE. Individualism made the Anglo-Saxon great, but it cannot keep him great. Individualism has ceased to be true. Once we wanted protest—protestantism; reform—reformation; revolt—revolution. Now we want something else, something architectonic—we want overmind—‘oversoul’. The infallible inspiration of the gospel of helter-skelter is succumbing to the higher criticism of the science of economic geography. For in the United States things can never be again as if Theodore Roosevelt had never been. He has not merely given us the idea; he has embodied the idea in an immortal scientific achievement. His politics means that the principles of intelligence, scientifically applied to the physical conditions of life in North America, have not only made progress possible, but acceleration of that progress possible. It means the quintuplication of the economic resources of the people of the great Mississippi Basin. It means the renaissance and enrichment of the South, and vast good to Central Canada. It means this because one man had sense

enough to know that things could not get themselves scientifically done by themselves, that progress is rational, not fortuitous. What he has already achieved is the guarantee of what his scientific policies have promised, and a warrant for the hope which most Americans have been holding in a dreamy way, but which a few great minds have foreseen as an accomplished thing in future time, of a superlative destiny for this new Western world, this world of the morn and the dew, this world whose vast fallow and fecund wildernesses have lain so long in the dark, while successive civilizations have depleted the potentiality of the larger and antipodal hemisphere where so much of humanity has grown old and grey.

‘America’, says Hegel, ‘is the land of the future, where, in the age that lies before us, the burden of the world’s history shall reveal itself. . . . It is the land of desire for all those who are weary of the historical lumber-room of old Europe. Napoleon is reported to have said : “*Cette vieille Europe m’ennuie.*” It is for America to abandon the ground on which hitherto the history of the world has developed itself. What has taken place in the New World up to the present time is only an echo of the Old World, the expression of a foreign life.’¹

Mr. Roosevelt has worked out his idea on rational and constitutional and human lines. This was his task. His struggles for a square deal for the common people have been successful. His geographical economies have been unparalleled. But his chief distinction is that he has given an ethical and constructive democracy a chance,

¹ Lecture delivered Winter of 1830-1.

for the first time on the Western Hemisphere, on principles which, avoiding both anarchy and socialism, shall conserve the ends of liberty, not merely as an end in itself, but as the condition of a national moral perfection.

Facing the failure of the democracy of individualism, already about reduced to its lowest terms of economic slavery and financial despotism, and socialism ready to occupy the field by reason of sheer want of another, and more rational, programme, he is the first American statesman who has wrought into deeds a fundamental body of doctrine involving a rationalization and moralization of the American Democracy. The foundations of the new Constructive Democracy are geographical foundations. This democracy is organized and centralized, but it avoids the common dangers of centralization in that it *is* democracy, i.e. that it is *self*-government. It differs from the fundamental idea of the old democracy of individualism in that it is self-government in its corporate and public aspect. It is national self-government in those areas which concern the national and common good. For the very life of this democracy, and its fitness to survive, are bound up in the proposition that the whole people is fit to govern, can govern, and does govern itself.

A new era dawned in the United States with a sudden and almost revolutionary enlargement and moralization of the sphere of the State during this one administration. The National Government, *qua* National Government, has for the first time frankly acknowledged its own responsibilities in the matter of the commonwealth and the common good, and the whole American people have

overwhelmingly supported the Constitutional Creed of Mr. Roosevelt to 'promote the general welfare'.

The political significance of the Conservation policies is that under them the aegis of the Constitution has been thrown over an unpre-empted area of human endeavour; that recognition has been given to the revolutionary doctrine that people may better work together than against each other for their common good. Results have been achieved undreamed of under *laissez-faire*. No section will profit so greatly as the new South, the stronghold of the democracy of individualism, the South looking toward a prosperity never before thought possible, because of these very Conservation policies, which their own Confederacy would have made for ever impossible. For the Montgomery Constitution expressly declared its Jeffersonian individualism in that no public improvement should ever be undertaken at the public expense.

But the South, more than all other sections, is to learn the value of the political application of scientific knowledge to human welfare through their own organ—the State, if, indeed, the people of the South have not begun to suspect it from the Government war on the stegomyia mosquito and yellow fever. The stegomyia mosquito defied the philosophy of individualism for hundreds of years, to surrender to science at last.

The American people have shown their ethical soundness in nothing more than in the support they have given their president in his effort to reconcile ethics and politics, in his aim to guide the rebound of political theory and practice in its unmistakable reaction from the extreme of anarchy toward the extreme of socialism,

and to hew the highway of the national destiny straight along the middle way, on sound, safe, and rational, and at the same time ethical lines of historic nationality.

Mr. Taft is reported to have said in a speech at Yale University, before he was nominated for the Presidency, that the Roosevelt politics were the only ones which could save the country from socialism. Whether he said it or not, it is true.

The people of the United States do not want socialism if they can have this kind of nationalism.

The twentieth century dawned upon the world in a state of arrested democracy, with the creed of the revolutionary forefathers discredited as not having fulfilled its promise. Conservatism was sterile and without a social programme, and glued to the *status quo*. Liberalism the world over had found itself bankrupt, except where it had maintained solvency by borrowing heavily from that hoary old usurer, Socialism. The ultra-individualism of the eighteenth and nineteenth centuries had been a good protestant philosophy in an age of reaction and revolt. It marked the end of an era. But, as Mazzini has said of the French Revolution, it was incapable of marking the beginning of a new age, for it had no programme and no possibility of a programme.

It may be as well to state here that Mr. Roosevelt's political philosophy is founded on neither individualism nor socialism as a theory of life. There is a middle ground between the two, and an element of political philosophy lying outside the two, which define the ground held by the Roosevelt school of politics. Unfortunately, no one yet has been able to coin a word which will cover

this ground. But the seven and a half years of his term of office have called a halt on the democracy of individualism, have stemmed the tide of socialism by the substitution of something better than either, which, for want of a better word to describe an ethical democracy, I call tentatively Nationalism.

It is due to Theodore Roosevelt almost wholly, not only that the distinction has been made between the democracy of individualism and ethical democracy, which is not exactly, perhaps, the democracy of altruism ; but that foundations have been laid for a democracy which implies that human progress is rational and not fortuitous, that its foundations are scientific, and that they do not lie in the quicksands of whimsicality and blind chance and *laissez-faire*.

A new era in American politics dates from the beginning of the Roosevelt administration. While this new era is revolutionary in its results, it is the simplest development, on conservative lines, of a principle as old as the American Republic. He has opposed two philosophies, or at least drawn a sharp distinction between them—the philosophy of individualism, that of all rights and no duties, which has found its classic expression in the Declaration of Independence, and the philosophy of duties as well as rights, of the reciprocity of the golden rule, which has found its expression in the Constitution of the United States. The trend of Mr. Roosevelt's work has been straight away from anarchy and toward law and order. It has led away from individualism, and, while not towards socialism, it has tended towards socialization, towards national organization in other

words, so far as it can be conceived from a strictly political standpoint, by scientific methods, and limited by American institutions. His position is that of the old nationalism, developed and up to date, which began to call order out of the individualist chaos of the national history, from the moment Alexander Hamilton entered the debates on the Constitution ; that nationalism which without cessation has been encroaching upon the political atomism of democracy ;—the atomism Thomas Jefferson adopted from the school of the French Revolution, the atomism whose direct lineage can be traced through Hobbes and Locke and further back through Epicurus to Democritus, the founder of atomism and doubtless of the democratic party, if Epicurus can be believed that Leucippius never existed. And, by the way, speaking of the political atomism of democracy, Democritus, the first consistent, and perhaps the original, Jeffersonian democrat, conceived the universe as constituted of infinitesimal atoms floating in an infinite void. Everything happens from the accidental meeting of these atoms in this void. There is a god upon the throne of this universe, endowed with two functions, namely, mixture and separation. The atoms themselves, devoid of quantities, are regulated by a force outside, not immanent, and Aristotle has not unjustly named this God *Chance*. If this exact theory could be transferred to a theory of politics, excepting the doctrine that the atoms are devoid of qualities, you would have a pure democracy of individualism. In it you have individualism minus the selfish instinct. Endow each atom with a sovereign selfish motive ; predicate of progress that

everything happens from the accidental meeting of these self-seeking atoms floating in the social void ; assume that there is no immanent reason or ethic among them, but that a blind god is shooting the arrows of whimsically undirected forces at random through time and space, and you have something like an individualism so pure that Democritus and Thomas Jefferson both might have claimed it as their own.

And so the individualist and democratic conception of the American State is that of a conglomeration of eighty-five million self-centres, in more or less of juxtaposition, each moving toward something or other with a selfish and introspective instinct, and that something certain pleasurable sensations to be enjoyed by that particular organism. Each self-centre pulls and struggles without common spirit or will, without architectonic reason, or 'oversoul', and unrestrained by considerations of right or wrong, except in terms of pleasure or pain. The fundamental error involved in this whole theory is that so many selfish instincts can ever coincide, or that eighty-five million private selfishnesses can ever be harmonious. Of course, it goes without saying that most individualist democrats are better than their creed, but there is no room in their theory for the conception of nationality or sociality. Individualism conceives no entity of the nation. But there is an entity of the nation. It is neither a convenient fiction nor a pleasing dream, nor a formula of words, nor the translucent film of metaphysical cobwebbery, nor yet a trick of the multiplication table of one multiplied by eighty-five millions, or thereabouts. There is something abroad in society not

accounted for in the materialism of individualism. The cash-nexus of Carlyle will not satisfy us. One cannot name it. But this is certain: whatever it is—what Jesus and Paul called ‘Charitas’, or what Aristotle called ‘Philia’, which was something wider than friendship,—it is that which binds society together and makes human society possible. It is the centripetal and not the centrifugal forces of life. Its essential principle is co-operative rather than antagonistic. It is altruistic rather than egoistic. It is rational rather than whimsical. It is ethical rather than selfish. It is not atoms at war, and it is one. Wordsworth has caught the idea:

As leaves on the trees whereon they grow
And wither, every generation
Is to the being of a mighty nation.

Thomas Hill Green has taught us, here in this University, that the introduction of a doctrine of duties with the doctrine of rights involves the idea of a common life and a common good. This idea of a common life and a common good is the foundation of the politics of this modern Aristotelian, Theodore Roosevelt, and in facing the issues of the twentieth century he has opposed sharply the foundations of the Declaration of Independence of all rights and no duties, to the philosophy underlying the Constitution of the United States, which is nationality, including duties as well as rights; and he has dragged out of the preamble of that Constitution a principle long forgotten, but a principle upon which the very Government was founded and for which it was founded—to *promote the general welfare*. This principle he has

relaid on geographical foundations as substantial as the Archaean Hills.

It is not claimed by the new politics that legislation will recreate human character or reform the world, or that the State, centralized or decentralized, can ever become what Bentham characterized as a 'mill to grind rogues honest'. The vain regret is as old as the memory of Antisthenes, who implored the Senate of his time to make horses of asses by official vote. The new democracy of nationalism claims for itself that it offers the forms of a rational association in a sphere of the State, enlarged and moralized, which will constitute a political environment where everything in the individual that is best and worth preserving will be encouraged instead of thwarted, and where the kindlier impulses of the human heart, the most of which are being choked in the maelstrom of individualism, shall have at least even chances for existence. If the State will offer a political environment which will make the public well-being possible, the public will look out for itself. The pathetic message of history is that the people have never had a chance. What they want is a chance. An ethical democracy would offer them a chance. Whether the legislative and economic forces which environ the daily lives of the multitudes are rational and ethical and social determines the limitations, and, to a large extent, the destinies of those lives. Whether they are the architectonic constructions of rational foresight, or the unplanned or unintelligent accidents of chance, will decide whether individuals shall walk in blind alleys or open avenues.

If the scientific and ethical and philosophical con-

tribution of Theodore Roosevelt to the United States, to the twentieth century ; if his warfare with the billionaire anarchist and his defence of the people's domain succeeds in awakening the national intelligence and the national conscience, in stemming its wayward course, in outlining the path of its future development, in drawing the large outlines of the only kind of democracy in which politics and ethics can ever coincide ; if he has drawn the line of cleavage where it belongs, and has set the party of State Rights over against the party of Nationality ; if he has opposed the principles of anarchy and sociality, the motives of egoism and altruism, the parties of self-interest and the general welfare, the philosophy underlying the Declaration of Independence, and that of the Constitution of the United States ; if he has with sufficient distinctness contrasted a political atomism with the social organism, the historian of a future age will have the right to compare him with the Fathers of his Country as a constructive statesman.

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